

V.—*Materials for a Flora of the Malayan Peninsula.*—By SIR GEORGE KING, K.C.I.E., LL.D., F.R.S., &c., late Superintendent of the Royal Botanic Garden, Calcutta.

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The present contribution to these *Materials* is occupied exclusively by an account of the Natural Order *Myrtaceæ*. In the sequence followed in *Hooker's Flora of British India*, which has been adopted in these papers, this family ought to have immediately preceded *Melastomaceæ*. But, for reasons which are of no importance to any one besides the author, the account of the latter order was prepared first and was published in the eleventh of these papers. In the present paper 122 species, belonging to 11 genera, are described. Six of these genera are represented by only a single species; two of them by 2 species; one by 5, one by 11, and the remaining one (*Eugenia*) by no fewer than 96 species. The latter genus is a very perplexing one, from the fact that the species resemble each other so closely. It is impossible to limit the genus by really good well-marked characters, and it is equally impossible to divide it into sub-genera by characters which do not break down. *Eugenia* seems to be essentially a genus in the evolution of which an extraordinary number of the successive forms have been preserved. I have adhered to the arrangement of the species into the groups *Jambosa* and *Syzygium*, although there are many species which might be referred to either. Nobody can be more dissatisfied than I myself am with the *clavis* of the species which I have prepared. In fact, while dealing with this genus and with its literature, the belief has been forced upon me that verbal descriptions are of very little use in identifying the species, and that the only safe way of doing so is by comparison with authentically named Herbarium specimens.

Order XLVI. MYRTACEÆ.

Trees or shrubs, rarely herbs. *Leaves* opposite, seldom alternate or whorled, petioled, simple, entire, rarely denticulate or crenate, 3-nerved or pinnately-nerved and usually with an intramarginal nerve, generally coriaceous, and dotted with pellucid glands. *Stipules* if present small and deciduous. *Flowers* regular, very rarely irregular, hermaphrodite, or polygamous by abortion, axillary, solitary or in spikes cymes corymbs or heads, naked or with an involucre, often with 2 bracts at the base, white, pink, purple, or yellow, never blue. *Calyx* superior or  $\frac{1}{2}$ -superior, limb 4-5-many-fid or -partite, persistent or deciduous,

valvate or imbricate, sometimes entire or closed in bud. *Petals* inserted on a disk surrounding the cavity of the calyx, equal in number to the calyx-lobes and alternate with them, rarely 0. *Disc* lining the calyx-tube, stamiferous at the margin. *Stamens* usually numerous, inserted with the petals in several rows, rarely definite and alternate with the petals; filaments free or more or less coherent at the base or in bundles opposite the petals; anthers small roundish, with parallel cells bursting longitudinally. *Ovary* inferior or  $\frac{1}{2}$ -inferior, crowned by a fleshy disk, 1-celled with 1 or more ovules, or more usually 2-many-celled with many ovules; placentation axile (parietal in *Rhodamnia*); style terminal rarely lateral, smooth or bearded at the summit; stigma undivided. *Fruit* usually crowned by the calyx-limb, either 1-celled and 1-seeded by abortion, or 2-many-celled with loculicidal dehiscence; or baccate and indehiscent with the cells many-seeded or 1-seeded by arrest. *Seeds* angular cylindric or compressed; testa hard or membranous, sometimes winged; albumen 0; embryo straight curved or spirally twisted, cotyledons usually short and obtuse sometimes combined into a mass with the radicle, very rarely leafy, radicle often thick. **DISTRIB.**—Tropical and sub-tropical regions of both hemispheres; species upwards of 2800.

TRIBE I. *Leptospermeæ*. Fruit capsular; leaves opposite or alternate.

Leaves narrow.

Flowers few or solitary in the leaf-axils.

Stamens 10 or fewer, free, in a single series; leaves opposite ... .. 1. BECKEA.

Stamens numerous, free, in a single series; leaves alternate ... .. 2. LEPTOSPERMUM.

Flowers in heads or spikes; leaves usually alternate; stamens numerous, slightly combined into bundles opposite to and longer than the petals ... .. 3. MELALEUCA.

Leaves broad.

Flowers in axillary cymes; leaves alternate; stamens indefinite, united into 5 bundles opposite to and shorter than the petals ... .. 4. TRISTANIA.

TRIBE II. *Myrtææ*. Fruit a berry; leaves opposite, often gland-dotted.

Ovary 1-celled with 2 parietal multi-ovulate placentas; flowers small; leaves 3-nerved from the base ... .. 5. RHODAMNIA.

Ovary 1-3-celled with 2 rows of ovules in each cell separated by spurious partitions; flowers rather large; leaves 3- to 5-nerved at the base, seeds numerous ... .. 6. RHODOMYRTUS.

Ovary 5- (sometimes 4-) celled, with several ovules in each cell, often with spurious partitions; seeds few; embryo long and narrow with small cotyledons: flowers small and numerous; leaves not 3-nerved ... .. 7. DECASPERMUM.

- Ovary 2-3-celled with several ovules in each cell, without spurious partitions; embryo thick, fleshy; cotyledons large radicle short; seeds few; stamens numerous ... 8. EUGENIA.
- Ovary 2-celled with numerous ovules in each cell; flowers small, few, in small axillary inflorescences. Stamens 8: otherwise as in *Eugenia* ... 9. PSEUDO-EUGENIA.
- TRIPE III. *Lecythidæ*. Fruit hard and fibrous or fleshy, indehiscent; leaves alternate, not gland-dotted.
- Stamens all antheriferous, staminodes none; embryo undivided; fruit angular, one-seeded ... 10. BARRINGTONIA.
- Inner stamens shorter and without anthers; embryo involute; the cotyledons leafy, plicate: fruit ovoid, several-seeded ... 11. PLANCHONIA.

## 1. BÆCKEA, Linn.

Glabrous heath-like shrubs. *Leaves* opposite, narrow, pointed, entire, with many pellucid glands. *Flowers* 5-merous, rarely 4-merous, axillary, peduncled, with 2 minutely bracteolate. *Calyx-tube* widely campanulate; lobes 5, membranous, persistent. *Petals* 5, suborbicular. *Stamens* 10 or fewer, shorter than the petals. *Ovary* in the single Malay species  $\frac{1}{2}$ -inferior, 2-3-celled, with several ovules in each cell. *Capsule* bursting from above loculicidally. *Seeds* angular; embryo straight with short cotyledons.—DISTRIB. Species about 50, the greater number Australian, a few in New Caledonia, one only extending into India.

There are considerable differences in the stamens amongst the species referred by Messrs. Bentham and Hooker to this Linnaean genus. Some of the species have only 5 stamens, while others (like the solitary Indo-Malayan one) have 10 which however are not unfrequently reduced to 8. There are moreover differences in the shape of the anthers and filaments. The ovaries also in some have two and in others three cells. On these and other characters more than a dozen genera were founded by Schauer and others, but these have been advantageously reduced to *Bæckea*.

BÆCKEA FRUTESCENS, Linn, Sp. Pl. 358. A slender shrub with thin wiry branches. *Leaves* linear, pointed, .25 to .5 in. long and .05 in. broad. *Flowers* axillary, .08 in. in diam., usually solitary, in short peduncles. *Calyx* with 5 rounded persistent lobes. *Stamens* 10 (or sometimes only 8). Ovary half-inferior. DC. Prod. III, 229; Sur. in Trans. Linn. Soc. III, 260; Bot. Mag. t. 2802; Blume Mus. Bot. I, 69; Miq. Fl. Ind. Bat. Vol. I. Pt. 1, 406; Suppl. 308; Benth. Fl. Hong-Kong, 118; Duthie in Hook. fil. Fl. Br. Ind. II, 463. *B. Cumingiana*, Schauer in Walp. Rep. II, 920. *B. chinensis*, Gærtn. Fruct. I, 157, t. 31. *B. sumatrana*, Bl. Mus. Bot. I, 69.

In all the provinces except the Andaman and Nicobar Islands. DISTRIB.—Malayan Archipelago.

## 2. LEPTOSPERMUM, Forst.

Shrubs or small trees, glabrous or silky-pubescent. *Leaves* alternate, entire, rigid, with 1-3 nerves or nerveless. *Flowers* solitary and axillary, or 2-3 together at the ends of the branches, rarely peduncled, sometimes polygamous; bracts broad, scarious, often imbricate, the lower ones caducous. *Calyx-tube* broadly campanulate or turbinate, adnate to the ovary below, the free upper part broad; lobes 5. *Petals* 5, spreading. *Stamens* numerous, in a single series, not longer than the petals; anthers versatile, their parallel cells bursting longitudinally. *Ovary* inferior or  $\frac{1}{2}$ -inferior, enclosed in the calyx-tube, 5- or more-celled, rarely 3- or 4-celled; style filiform, inserted in a deep depression of the ovary, sometimes short; stigma capitate or peltate. *Capsule* usually exceeding the calyx-tube, opening loculicidally from above. *Seeds* numerous, linear or winged, often sterile; embryo straight. **DISTRIB.**—Species upwards of 30, chiefly Australian, a few in New Zealand and New Caledonia.

## NOTE.

As in *Bæckea* the species have been separated off into several genera which have been reduced by Messrs. Bentham and Hooker.

LEPTOSPERMUM FLAVESCENS, Sm. in Trans. Linn. Soc. III, 262. A bush or small scraggy tree with thin, striate, 4-angled branches: the young parts glabrous or sericeous. *Leaves* coriaceous, narrowly oblong-lanceolate to oblanceolate, obtuse, often with a deciduous point, subsessile; when dry distinctly dotted beneath and obscurely 3-nerved, glabrous or silky on the midrib beneath and on the edges, from  $\cdot 4$  to 1 in. long and  $\cdot 1$  to  $\cdot 3$  in. broad. *Flowers* sessile or sub-sessile, about  $\cdot 5$  or  $\cdot 6$  in. in diam. (when dry). *Calyx-tube* glabrous or sericeous. *Capsule* much depressed, surrounded by the calyx-tube, glabrous or hairy, 5-ridged, pitted, opening by 5 valves,  $\cdot 25$  to  $\cdot 30$  in. in diam. (when dry). DC. Prod. III, 227; Hook. fil. Fl. Tasm. I, 139; Benth. Fl. Austral. III, 104.

This species is common and widely distributed in Australia and has several well-marked varieties of which two occur in our region.

VAR. *commune*, Benth. Fl. Austral. III, 104. Young branches leaves and calyx-tube glabrous or glabrescent. *Leaves* narrowly oblong or linear-lanceolate,  $\cdot 1$  to  $\cdot 15$  in. broad. *L. flavescens*, Bot. Mag. t. 2695. *L. amboinensis*, Blume Bijdr. 1100: Mus. Bot. Lugd. Bat. I, 68; DC. Prod. III, 229; Miq. Fl. Ind. Bat. I, Pt. 1, 404; Duthie in Hook. fil. Fl. Br. Ind. II, 464. *L. polygalifolium*, Salisb. Prod. 350; *L. Thea*, Willd. Spec. Pl. II, 949. *L. porophyllum*, Cav. Ic. IV, 17, t. 330, fig. 2. *Macklottia amboinensis*, Korth. in Ned. Kruidk. Arch. I, 196. *Myrtus amboinensis*, Rumph. Herb. Amb. II, 77, t. 18.

MALACCA (on Mount Ophir); *Griffith* (K.D. 2339); *Lobb*, *Stolickza*, *Maingay* (K.D.) 713. KEDAH, *Ridley* 5349. DISTRIB.—Bangka, Amboina, Moluccas, Borneo, Australia.

VAR. *javanica*. Young branches densely sericeous; *calyx-tube* glabrescent, occasionally very sericeous. *Leaves* obovate-lanceolate, broadly obtuse, with long silky hairs on the margins and on the midrib beneath. *Flowers* often crowded. *L. javanicum*, Blume Bijdr. 1100; Mus. Bot. Lugd. Bat. I, 68; DC. Prod. III, 229: Duthie in Hook. fil. Fl. Br. Ind. II, 464. *L. floribundum*, Jungh. Java I, 578; Nat. en Geneesk. Arch. Ned. Ind. II, 370; Miq. Fl. Ind. Bat. I, Pt. 1, 404. *Macklottia javanica*, Korth. Ned. Kruidk. Arch. 196.

MALACCA: *Griffith*. PERAK: *Wray* 330, 885, 3839: *Scortechini* 754: *King's Collector* 7426, 7435. DISTRIB.—Sumatra, Java, Celebes, Borneo. Burmah (a single specimen) at Moulmein; *Lobb*. This variety is much commoner in the Peninsula than the former.

### 3. MELALEUCA, Linn.

Trees or shrubs. *Leaves* alternate, rarely opposite, entire, lanceolate or linear, flat or subterete, 1–3—many-nerved. *Flowers* in heads or spikes, each sessile in the axil of a floral leaf, 5-merous; bracts deciduous. *Calyx-tube* subglobose; lobes 5, imbricate or open, deciduous or persistent. *Petals* 5, spreading, deciduous. *Stamens* numerous, more or less united at their bases into 5 bundles opposite the petals; anthers versatile, the cells parallel and bursting longitudinally. *Ovary* inferior or half-inferior, enclosed in the tube of the calyx; style filiform, stigma small; ovules numerous. *Capsule* included in the calyx, dehiscing loculicidally by 3 valves. Perfect *seeds* cuneate: embryo straight, longer than the radicle. DISTRIB.—Species about 130, almost all Australian, but one scattered in Asia.

MELALEUCA LEUCADENDRON, Linn. Mant. 105. A tree often of considerable size; the bark pale, thick, peeling off in papery layers. Branches usually pendulous, slender. *Leaves* coriaceous, alternate, narrowly oblong-elliptic, oblique or falcate, acuminate acute or obtuse, narrowed below into a short petiole, with 3 to 5 or 7 vertical unanastomosing nerves; when young adpressed-hairy, when old glabrous: length 1·5 to 5 in.; breadth ·2 to 1 in. *Spikes* 2 to 6 in. long; sometimes interrupted, solitary, at first terminal but subsequently surmounted by a leaf-axis, the rachis and calices glabrous or hairy: *calyx-tube* ovoid, the lobes orbicular. *Petals* ·1 to ·15 in. in diam. *Staminal* bundles under ·5 in. long. *Fruit* about ·2 in. in diam. Benth. Fl. Austral. III, 142: Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 61; Fl. Br. Burm. I, 472; Duthie in Hook. fil. Fl. Br. Ind. II, 465.

MALACCA: *Singapore*. DISTRIB.—Malayan Archipelago, British India, Australia.

The following two varieties have been distinguished by Mr. Duthie in Hooker's Flora of British India.

VAR. *Leucadendron*; spikes glabrous. Linn. Mant. 105 and Suppl. 342; Lour. Fl. Cochinch. 468; Roxb. Fl. Ind. III, 397; DC. Prodr. III, 212; Wall. Cat. 3646; Blume Mus. Bot. I, 66; Miq. Fl. Ind. Bat. I, pt. 1, 401. *Myrtus Leucadendron*, Linn.—Rumph. Herb. Amb. II, 72, tt. 16, 17, f. 1.—Cultivated in India.

VAR. *minor*; spikes villous. *M. minor*, Sm. in Rees. Cycl. 23; DC. Prodr. III, 212; Wall. Cat. 3645; Blume Mus. Bot. I, 67; Miq. Fl. Ind. Bat. I, Pt. 1, 403. *M. Cajuputi*, Roxb. Fl. Ind. III, 394; W. & A. Prodr. 326; Miq. l.c. 403. *M. Leucadendron*, Lam. Encycl. 641. *M. viridiflora*, Gærtn. Fruct. I, 173, t. 35; DC. Prodr. l.c.; Wall. Cat. 3647. *M. saligna*, Blume Mus. Bot. I, 66. *M. Cumingiana* and *lanceifolia*, Turcz. in Bull. Soc. Mosc. xx. 164. *M. saligna*, Gmel. Syst. 793.—Rumph. Herb. Amb. II, 76.—This appears to be the plant from which the Cajuput-oil of commerce is chiefly obtained.

#### 4. TRISTANIA, R. Br.

Tall shrubs or trees. *Leaves* alternate or crowded at the summit of the branches, rarely opposite, coriaceous, glabrous. *Flowers* small, yellow or white, in pedunculate axillary cymes; bracts deciduous or 0. *Calyx-tube* turbinate-campanulate or open, attached below to the ovary; lobes 5, short, persistent. *Petals* 5, imbricate, spreading. *Stamens* numerous, shorter than the petals, usually united in 5 bundles and opposite to them; anthers versatile, cells parallel and opening longitudinally. *Ovary* inferior or  $\frac{1}{2}$ -superior, the apex flat or convex; 3-celled; ovules many in each cell, suspended or horizontal. *Capsule* loculicidally 3-valved. Perfect *seeds* few, linear, cuneate, or winged at the upper part; embryo straight, cotyledons broad, longer than the radicle.

DISTRIB.—About 22 species inhabiting the Malay peninsula and islands, New Caledonia, and Australia.

Leaves sessile, sub-auriculate ... .. 1. *T. subauriculata*.  
Leaves narrowed into a short petiole.

Cymes (with their peduncles) much shorter than the leaves.

Leaves oblanceolate or obovate-oblong; capsules globular.

Petals transversely oblong, entire, shortly clawed;  
capsules '4 to '5 in, in diam. ... .. 2. *T. merguensis*.

Petals sub-rotund, subentire, hairy; capsules '35 in. in  
diam. ... .. 3. *T. Maingayi*.

Leaves obovate; capsule oblong, '2 in. long; petals sub-  
rotund, their margins serrate ... .. 4. *T. obovata*.

Cymes (with their peduncles) longer than the leaves ... 5. *T. Whiteana*.

1. *TRISTANIA SUBAURICULATA*, n. sp. King. A tree 10 to 40 feet high: the young branches pale (when dry) puberulous or glabrescent. *Leaves* very coriaceous, sessile, obovate-oblong, the apex broad, blunt, emarginate or slightly pointed, gradually narrowed to the slightly-auricled base: both surfaces glabrous, pale when dry, the upper shining, the lower paler, dull, obscurely glandular: main-nerves spreading, not prominent, .2 in. apart, length 2.5 to 6 in.; breadth 1.5 to 2.5 in. *Cymes* axillary, few-flowered, much shorter than the leaves, dichotomous: the peduncles .3 to .8 in. long, compressed, clothed, especially above, with white silky hairs. *Flowers* .25 in. across. *Calyx-tube* tubular-campanulate, densely pubescent below externally, the teeth broadly triangular, blunt, short. *Petals* rounded, entire, glabrous. *Stamens* in 5 groups of 10 each. *Ovary* depressed-globular, glabrous. *Capsule* sub-globular, glabrous, half-enveloped by the calyx, .25 in. in diam. *Seeds* compressed, about 8 in each cell.

PERAK: *King's Collector* 7047, 8253.

This is allied to *T. merguensis*, but has broader leaves of much thicker texture and sessile; shorter fewer-flowered cymes, and smaller flowers and fruit.

2. *TRISTANIA MERGUENSIS*, Griff. in Journ. As. Soc. Beng. for 1854, p. 637. A tree. Young branches stout with pale bark when dry; the youngest puberulous. *Leaves* obovate-lanceolate, obtuse or obtusely acuminate, narrowed to the very short or almost obsolete petiole; main-nerves ascending, distinct, .1 in. apart; both surfaces glabrous, the lower dull, paler and obscurely glandular, the upper shining; length 3.5 to 7 in.; breadth 1.15 to 2 in.; petiole .1 to .2 in. *Cymes* on angular peduncles .5 to 1.5 in. long, slightly supra-axillary, shorter than the leaves, dichotomous, hoary-pubescent, especially towards the apex. *Flowers* densely crowded at the ends of the branchlets, .25 in. in diam. *Calyx-tube* densely clothed with white pubescence on both surfaces, broadly cupular, tapered to the very short almost obsolete pedicel, the teeth broad, rounded. *Petals* small, transversely oblong, shortly clawed. *Ovary* pilose. *Capsule* sub-globular, large (.4 in. in diam.), glabrous, half-enveloped by the calyx; its valves broad, blunt. *Seeds* compressed, about 8 in each cell. Kurz, For. Fl. Burm. I, 473. "*Tristania affinis*," Griff. Notul. 650: Ic. Pl. Asiat. t. 636, f. 3. *Melaleuca eugenifolia*, Wall. Cat. 3648. *M. decurrens*, Wall. Cat. 3649.

MALACCA: *Finlayson, Harvey.* PERAK: *Wray* 2921, 4124; *Scortechini* 1021. PAHANG: *Ridley* 1062: growing at elevations of several thousand feet. **DISTRIB.**—Burma, Borneo.

3. *TRISTANIA MAINGAYI*, Duthie in Hook. fl. Fl. Br. Ind. II, 467. A tree: young branches with brown bark (when dry) and covered with deciduous white hairs. *Leaves* narrowly oblong-oblancoate acute, much

narrowed to the short petiole; main-nerves spreading, less than .1 in. apart, not conspicuous; lower surface dull and glandular, slightly paler than the shining upper: length 1.75 to 3.5 in.; breadth .5 to 1.25 in.; petiole .1 to .2 in. *Cymes* on angular peduncles .5 to 1.25 in. long, axillary, shorter than the leaves, dichotomous, hoary; the flowers few, crowded, .3 in. in diam., on very short pedicels. *Calyx-tube* broadly cup-shaped, tapered to the base; the teeth shallow, broad, sub-acute. *Petals* small, sub-rotund, sub-entire, hairy outside. *Ovary* pubescent. *Capsule* large (.35 in. in diam.) sub-globular, glabrous, enclosed in the calyx except at the apex; its valves broad, blunt. *Seeds* winged, 9 or 10 in each cell.

PENANG: *Maingay* (K.D. 769); *Curtis*, 238, 438.

I keep up this species with much hesitation. It appears to me to be a form of *T. merguensis* with leaves and capsules smaller than usual.

4. *TRISTANIA OBOVATA*, R. Br. in Benn. and Horsf. Fl. Jav. 127, t. 27. A large shrub: the young branches reddish-brown, rusty puberulous. *Leaves* obovate, much contracted to the short petiole, the apex rounded or retuse; both surfaces glabrous, the lower glandular and paler: main-nerves spreading, about .1 in. apart; length 1.5 to 2.5 in.; breadth .6 to 1.2 in.; petiole .2 to .4 in. *Cymes* extra-axillary and terminal, few-flowered, puberulous or glabrous, much shorter than the leaves. *Flowers* .15 in. long, on pedicels shorter than themselves, often in pairs. *Calyx-tube* turbinate; the teeth rounded, short. *Petals* sub-rotund with serrate margins. *Ovary* silky. *Capsule* .2 in. long, oval, glabrous, much longer than the persistent calyx: its valves broad, blunt. Miq. Fl. Ind. Bat. I, Pt. 1, 397.

SINGAPORE: *Ridley* 5886.

5. *TRISTANIA WHITEANA*, Griff. Pl. Cantor. 18. A shrub, the young bark brown. *Leaves* oblanceolate, bluntly acuminate, much narrowed to the short petiole; both surfaces shining, the lower pellucid-punctate, pale: main-nerves numerous (about .05 in. apart), sub-horizontal; length 3 to 5.5 in.; breadth .75 to 1.75 in.; petiole .25 to .5 in. *Cymes* on peduncles nearly as long as the leaves, corymbosely paniculate, minutely pubescent, axillary and terminal, the bracts few and leaflike; bracteoles small caducous. *Flowers* numerous, on pedicels shorter than themselves, .1 in. across. *Calyx-tube* obconic, densely pubescent on both surfaces, its teeth obsolete. *Petals* orbicular, glandular. *Capsule* under .1 in. in diam., free from the calyx except at the base. *T. Wightiana*, Duthie in Hook. fil. Fl. Br. Ind. II, 466. *T. sumatrana*, Miq. Fl. Ind. Bat. Suppl. 308. *Hypericinea pimentifolia*, Wall. Cat. 4828.



MALACCA: *Griffith* (K.D. 2340). SINGAPORE: *Wallich, Lobb.*  
PENANG: *Walker* 62. DISTRIB.—Sumatra, Java, Borneo.

## NOTE.

In Hooker's *Flora of British India* *T. burmannica*, Griff. is said to have been collected at Malacca. I find however no specimens from that locality in either the Kew or the Calcutta Herbarium; and I therefore omit it here.

## 5. RHODAMNIA, Jack.

Shrubs or small trees. *Leaves* opposite, 3-nerved, hoary or pubescent beneath. *Flowers* rather small, pedicels short, sometimes shortly fasciculate or in short lax racemes; bracteoles small, deciduous. *Calyx-tube* ovoid or subglobose, not produced beyond the ovary; segments 4, persistent. *Petals* 4, spreading. *Stamens* numerous, in several series, free; filaments filiform; anthers versatile with parallel cells dehiscing longitudinally. *Ovary* 1-celled with parietal placentas and many ovules; style filiform, stigma peltate. *Berry* globose, crowned with the limb of the calyx. *Seeds* few, reniform, globose or variously compressed, testa hard; embryo horseshoe-shaped, radicle long, cotyledons very short. DISTRIB.—About 6 species; Australia, and Tropical Asia.

RHODAMNIA TRINERVIA, Blume *Mus. Bot. Lugd. Bat.* I, 79. A small tree or a shrub: young parts and inflorescence often silky. *Leaves* ovate-oblong or oblong-lanceolate, acuminate, 3-nerved; upper surface glabrous, reticulate; the lower glabrous or silvery pubescent; length 1.75 to 4.5 in.; breadth .75 to 2 in.; petiole .2 to .35 in. *Peduncles* varying in length but always much shorter than the leaves, axillary, 1- rarely 3-flowered, minutely bracteolate near the calyx. *Fruit* globose, reddish, .2 to .3 in. in diam. Kurz in *Journ. As. Soc. Beng.* XLVI, Pt. 2, 63; *For. Fl. Br. Burma* I, 474; *Benth. Fl. Austral.* III, 278; *Duthie in Hook. fil. Fl. Br. Ind.* II, 468. *Myrtus trinervia*, Sm. in *Trans. Linn. Soc.* III, 280. *Eugenia? trinervia*, DC. *Prod.* III, 279; *Bot. Mag.* 3223.

In all the Provinces except the Andaman Islands; common. DISTRIB.—The Malayan Archipelago and Philippines to Australia, Burma.

VAR. *concolor*; leaves green on both surfaces, sparingly pubescent, peduncles 4-7- or fewer-flowered. *R. cinerea*, Griff. *Notul.* 653, not of Jack.; Kurz in *Journ. As. Soc. l.c.* *R. concolor*, Miq. *Fl. Ind. Bat. Suppl.* I, 315. *Myrtus smilacifolia*, Wall. *Cat.* 3629.

VAR. *spectabilis*; leaves silvery-white beneath or greyish when old, flowers usually fewer, 2 or solitary. *R. spectabilis*, Blume *Mus. Bot.* I, 78; Miq. *Fl. Ind. Bat.* I, Pt. 1, 479; Kurz *l.c.* *R. cinerea*, Jack. in *Mal. Misc.* *Monoxora spectabilis*, Wight *Ill.* II, 12, t. 97, f. 5,

*E. Nageli*, Miq. Fl. Ind. Bat. I, Pt. 1, 478. *R. subtriflora* and *R. Mulleri*, Bl. l.c. 79.

This species, being widely distributed, presents many forms several of which have been described as species. The above arrangement of these forms into two varieties was first suggested by Kurz.

## 6. RHODOMYRTUS, DC.

Small trees or tomentose shrubs. *Leaves* opposite, 3-nerved. *Flowers* rather large, axillary. *Calyx-tube* turbinate, oblong or sub-globose, slightly produced above the ovary; lobes 5, rarely 4, herbaceous, persistent. *Petals* 5, rarely 4, spreading. *Stamens* indefinite, free, in many series. *Ovary* 1-2-3-celled with spurious partitions, or divided into numerous 1-ovuled superposed cells; style filiform, stigma capitate. *Berry* globose or ovoid, with few or numerous seeds not distinctly superposed in rows. *Seeds* compressed, reniform or nearly orbicular, horizontal, testa hard; embryo curved or spiral, radicle very long, cotyledons small. **DISTRIB.**—5 species, four of them inhabitants of E. Australia, and one widely distributed over Tropical Asia, especially throughout the Indian Archipelago, as far as China.

**RHODOMYRTUS TOMENTOSA**, Wight Spicil. Neilgh. I, 60, t. 71. A shrub 4 to 8 feet high: young parts tomentose. *Leaves* the lower ternate, the upper opposite, elliptic to obovate, obtuse, sometimes mucronate, 3-nerved, the under surface covered with soft white tomentum, the upper glabrous: length 1.5 to 2.5 in.; breadth .65 to 1 in.; petiole .1 to .15 in. *Peduncles* axillary shorter than the leaves, 1-3-flowered, bracteolate close to the calyx. *Flowers* .5 to .75 in. across. *Calyx* tomentose, with 5 unequal lobes. *Petals* downy, shortly clawed. *Berry* about the size of a cherry, oval or sub-globose, dark-purple: pulp abundant, sweet. *Seeds* compressed, forming 2 rows in each cell. Miq. Fl. Ind. Bat. I, Pt. 1, 477; Benth. Fl. Hongk. 121; Duthie in Hook. fil. Fl. Br. Ind. II, 469; Trimen Fl. Ceylon. II, 166. *Myrtus tomentosa*, Ait.; DC. Prodr. III, 240; Vahl Symb. II, 56; Blume Bijdr. 1081; W. & A. Prodr. I, 328; Wight Ill. II, 12, t. 97, f. 3, Ic. 522; Roxb. Fl. Ind. II, 498; Wall. Cat. 3630; Korth. in Ned. Kruidk. Arch. I, 197. *M. canescens*, Lour. Fl. Cochinc. I, 311.

**PENANG, MALACCA, PERAK.** **DISTRIB.**—Malayan Archipelago. Hills of Southern British India and Ceylon.

## 7. DECASPERMUM, Forst.

Shrubs or small trees. *Leaves* opposite, pinnate-nerved. *Flowers* small, in axillary racemes, or in terminal leafy panicles, occasionally polygamous. *Calyx-tube* campanulate, slightly or not at all produced

above the ovary; lobes 4 or 5, spreading. *Petals* 4 or 5, spreading. *Stamens* numerous in several series, free, filaments filiform; anthers small, versatile, with parallel cells opening longitudinally. *Ovary* 4- or 5-celled with 2 or very few ovules in each cell; cells often divided by spurious dissepiments; style filiform, stigma peltate. *Berry* globose, crowned by the calyx-lobes. *Seeds* 8 to 10, reniform-sub-globose, testa hard; embryo horse-shoe-shaped or circular, with long radicle and short cotyledons. **DISTRIB**—About 4 species in tropical Asia, Australia, and the Pacific Islands.

**DECASPERMUM PANICULATUM**, Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 61: For. Flora. Br. Burma I, 475. A small tree, often 30 feet high. Young parts and inflorescence minutely sericeous-tomentose. *Leaves* membranous or thinly coriaceous, oblong-lanceolate or ovate-lanceolate, acuminate, the base often narrowed, edges entire; main-nerves about 10 pairs, spreading, not prominent; upper surface glabrous: the lower paler and reddish, glandular, midrib always pubescent on the lower and always on the upper; length 1.25 to 3.5 in.; breadth .4 to 1 in.; petiole .1 to .3 in. *Panicles* axillary and shorter than the leaves, or terminal and longer than the leaves; bracts small and deciduous, or leaf-like and permanent. *Flowers* .2 to .3 in. in diam., often polygamous. *Petals* white, pubescent inside. *Calyx-tube* more or less clothed with white hairs; the lobes roundish or sub-acute, hairy or glabrous. *Style* exserted. *Berry* globose, about .1 in. in diam. Duthie in Hook. fil. Fl. Br. Ind. I, 470. *Nelitris paniculata*, Lindl. Collect. Bot. under 16; DC. Prod. III, 231; Wall. Cat. 3627; Wight III. II, t. 97, fig. 10. Icon. 521; Benth. Fl. Austral. III, 279. *N. polygama*, Spreng. Syst. II, 488; Korth. in Ned. Kruidk. Arch. I, 197. *N. pallescens*, Miq. Fl. Ind. Bat. Suppl. 314. *Eugenia polygama*, Roxb. Hort. Beng. 92; Fl. Br. Ind. II, 491. *E. cuspidata*, Wall. Cat. 3627. *Memecylon acuminatum*, Wall. Cat. 4105; *Syzygium vimineum*, Wall. Cat. 3593 B. *Hiræa Finlaysoniana*, Wall. Cat. 3566 F.

In all the provinces except the Andaman and Nicobar Islands: common. **DISTRIB.**—Malayan Archipelago, Burma, Khasia Hills, Sikkim Terai.

Various other forms to which specific names have been given appear to me to be reducible here. The Wallichian examples in Herb. Calcutta of Wall. Cat. 3593 B and 4105 belong in my opinion to this species.

**VAR.** *Finlaysoniana*, Duthie l.c.; leaves sub-coriaceous, panicles shorter than the leaves, few-flowered, calyx densely tomentose, its lobes rounded: stamens nearly equalling the petals. *N. polymorpha*, Blume Mus. Bot. Lugd. Bat. I, 75, t. LX. *Hiræa Finlaysoniana*, Wall. Cat. 7363.

8. EUGENIA, Linn.

Trees or shrubs, smooth or rarely tomentose or setose. *Leaves* opposite rarely alternate, coriaceous or membranous, pinnate-nerved. *Inflorescence* centripetal with solitary axillary flowers, or in short racemes or centrifugal in dense terminal or axillary cymes or in terminal or lateral trichotomous panicles. *Bracts* usually small and deciduous. *Calyx-tube* globose or more or less elongate, 4- or 5-lobed or sub-truncate. *Petals* 4 or 5, free and spreading or connivent calyprate and caducous. *Disc* lining the calyx-tube, stamiferous at the edge. *Stamens* numerous, in many rows, usually combined in 4 or 5 bundles; filaments slender; anthers small, versatile, dehiscent longitudinally. *Ovary* inferior, 2- rarely 3-celled; ovules many in each cell; style filiform, stigma small. *Fruit* inferior, crowned by the remains of the calyx, pulpy, rarely dry. *Seeds* few, oblong or globose, often compressed, testa membranous or cartilaginous, albumen none or very scanty; embryo thick, fleshy. **DISTRIB.**—About 650 species chiefly in tropical America and Asia; a few in tropical Africa and Australia.

**Sect. I. JAMBOSA.** Flowers usually 4-merous, often large. *Calyx* clavate, funnel-shaped or sub-globose, its staminal disc often thickened and its mouth with 4-persistent often thickened lobes crowning the fruit. *Petals* free, *Berry* pulpy; seeds large.

*Leaves large*—

Leaves with their main nerves under 20 pairs, bold, the reticulations inconspicuous, mostly from 8 to 14 in. long (except in Nos. 8, 9 and 10)—

Flowers 1 inch or more across—

- |  |     |     |   |                            |
|--|-----|-----|---|----------------------------|
| Leaves on very short inconspicuous petioles, auricled at the cordate base, often amplexicaul | ... | ... | { | 1. <i>E. formosa</i> .     |
|  |     |     | { | 2. <i>E. Perakensis</i> .  |
|  |     |     | { | 3. <i>E. javanica</i> .    |
| Leaves neither cordate nor amplexicaul but narrowed at the base                              | ... | ... | { | 4. <i>E. Jambos</i> .      |
|  |     |     | { | 5. <i>E. malaccensis</i> . |

Flowers half an inch or at most three quarters of an inch across—

Leaves glabrous—

- |   |     |     |                               |                              |
|---|-----|-----|-------------------------------|------------------------------|
| Young branches sub-terete or compressed | ... | {   | 6. <i>E. pseudo-formosa</i> . |                              |
|   |     | {   | 7. <i>E. papillosa</i> .      |                              |
|   |     | {   | 8. <i>E. densiflora</i> .     |                              |
|   |     | {   | 9. <i>E. plumbea</i> .        |                              |
| Young branches 4-angled                 | ... | ... | {                             | 10. <i>E. Scortechinii</i> . |
|   |     |     | {                             | 11. <i>E. mollis</i> .       |

Leaves hairy beneath; flowers in terminal panicles (Leaves 8 to 16 in. long, with very numerous (more than 20 pairs) of bold distinct sub-horizontal main nerves; flowers half an inch or more in diameter—

- |                                  |     |     |     |     |   |                               |
|----------------------------------|-----|-----|-----|-----|---|-------------------------------|
| Reticulations of leaves distinct | ... | ... | ... | ... | { | 12. <i>E. quadrata</i> .      |
|                                  |     |     |     |     | { | 13. <i>E. scalarinervis</i> . |
|                                  |     |     |     |     | { | 14. <i>E. pergamentacea</i> . |

Reticulations of leaves faint ... .. { 15. *E. Dyeriana*.  
 16. *E. Hemsleyana*.

Leaves small—

Leaves 2.5 to 8 in. long (longer in No. 19)

Flowers in terminal spreading panicles—

Leaves obovate, oblanceolate, or broadly elliptic ... { 17. *E. pachyphylla*.  
 18. *E. lepidocarpa*.  
 19. *E. garcinifolia*.  
 20. *E. crenulata*.

Leaves oblong, ovate or elliptic, tapering slightly  
 at each end ... .. { 21. *E. grandis*.  
 22. *E. Thumra*.  
 23. *E. Griffithii*.  
 24. *E. Clarkeana*.  
 25. *E. corrugata*.

Leaves ovate-lanceolate or narrowly elliptic (some-  
 times broadly elliptic in *E. pyrifolia*) much narrowed  
 to each end, the apices sometimes caudate-acuminate—

Flower-buds clavate ... .. { 26. *E. pendens*.  
 27. *E. Burkilliana*.  
 28. *E. Helferi*.  
 29. *E. Kurzii*, VAR.  
*andamanica*.

Flower-buds clavate ... .. { 30. *E. anisosepala*.  
 31. *E. Gageana*.  
 32. *E. Hullettiana*.  
 33. *E. chlorantha*.  
 34. *E. penangiana*.

Flower-buds globular, not clavate ... .. { 35. *E. Ridleyi*.  
 36. *E. pyrifolia*.  
 37. *E. lineata*.  
 38. *E. cymosa*.

Flowers in small axillary or terminal racemes or in lax  
 racemose few-flowered panicles—

Flower buds globular or slightly elongated ... .. { 39. *E. conglomerata*.  
 40. *E. urceolata*.  
 41. *E. glauca*.  
 42. *E. subrufa*.  
 43. *E. Duthieana*.  
 44. *E. polyantha*.  
 45. *E. Manii*.  
 46. *E. caudata*.

Flower-buds and flowers much elongated ... .. { 47. *E. filiformis*.  
 48. *E. andamanica*.

Flowers in dense short terminal or axillary glomeruli  
 or cymes—

Flowers not conspicuously bracteolate—

Flower-buds globular ... .. 49. *E. Hoseana*.

- |  |  |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
|--|--|---|-----------------------------|---|--------------------------|---|---------------------------|---|--------------------------|---|----------------------|---|----------------------|
| Flower-buds much elongated ... ..  | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>50. <i>E. Benjamina.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>51. <i>E. variolosa.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>52. <i>E. claviflora.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>53. <i>E. zeylanica.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>54. <i>E. grata.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>55. <i>E. tecta.</i></td></tr> </table> | { | 50. <i>E. Benjamina.</i>    | { | 51. <i>E. variolosa.</i> | { | 52. <i>E. claviflora.</i> | { | 53. <i>E. zeylanica.</i> | { | 54. <i>E. grata.</i> | { | 55. <i>E. tecta.</i> |
| {  | 50. <i>E. Benjamina.</i>   |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 51. <i>E. variolosa.</i>   |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 52. <i>E. claviflora.</i>  |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 53. <i>E. zeylanica.</i>   |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 54. <i>E. grata.</i>   |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 55. <i>E. tecta.</i>   |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| Flowers in conspicuously bracteolate dense clusters,<br>branches 4-angled ... .. | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>56. <i>E. pseudo-tetra-</i></td></tr> <tr><td style="font-size: 2em;">{</td><td style="text-align: right;"><i>ptera.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>57. <i>E. polita.</i></td></tr> </table>   | { | 56. <i>E. pseudo-tetra-</i> | { | <i>ptera.</i>            | { | 57. <i>E. polita.</i>     |   |                          |   |                      |   |                      |
| {  | 56. <i>E. pseudo-tetra-</i>  |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | <i>ptera.</i>  |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |
| {  | 57. <i>E. polita.</i>  |   |                             |   |                          |   |                           |   |                          |   |                      |   |                      |

Sect. II. SYZYGIIUM. Flowers 4- or 5-merous, usually small: the calyx obovoid, turbinate or clavate, its staminal disc rarely thickened, the mouth 4- or 5-toothed or lobed or sub-entire. *Petals* more or less connate, much imbricate and calyprately deciduous. *Berries* small, sub-globose or oblong, often with little pulp.

Flowers paniced, their buds 2 in. or more in length (less in *E. nigricans* and *E. expansa*), clavate, always narrowed into a long pseudo-stalk—

Leaves more than 2 inches long—

Main-nerves of leaves under 25 pairs, distinct—

- |  |   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
|--|---|---|------------------------------|---|-----------------------------|---|----------------------------|---|-------------------------|---|--------------------------|---|----------------------------|---|---------------------------|---|---------------------------|
| Panicles large, lax, spreading, mostly terminal ...  | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>58. <i>E. valdevenosa.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>59. <i>E. oblongifolia.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>60. <i>E. sub-hori-</i></td></tr> <tr><td style="font-size: 2em;">{</td><td style="text-align: right;"><i>zontalis.</i></td></tr> </table>  | { | 58. <i>E. valdevenosa.</i>   | { | 59. <i>E. oblongifolia.</i> | { | 60. <i>E. sub-hori-</i>    | { | <i>zontalis.</i>        |   |                          |   |                            |   |                           |   |                           |
| {  | 58. <i>E. valdevenosa.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 59. <i>E. oblongifolia.</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 60. <i>E. sub-hori-</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | <i>zontalis.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| Panicles short, both axillary and terminal ...   | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>61. <i>E. Valetonianana.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>62. <i>E. expansa.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>63. <i>E. chloroleuca.</i></td></tr> </table>  | { | 61. <i>E. Valetonianana.</i> | { | 62. <i>E. expansa.</i>      | { | 63. <i>E. chloroleuca.</i> |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 61. <i>E. Valetonianana.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 62. <i>E. expansa.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 63. <i>E. chloroleuca.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| Nerves of leaves very numerous, close together and<br>equally distinct or often all obscure ... .. | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>64. <i>E. nigricans.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>65. <i>E. inophylla.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>66. <i>E. oblata.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>67. <i>E. Bernardi.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>68. <i>E. Prainiana.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>69. <i>E. Pearsoniana.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>70. <i>E. lævicaulis.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>71. <i>E. Goodenovii.</i></td></tr> </table> | { | 64. <i>E. nigricans.</i>     | { | 65. <i>E. inophylla.</i>    | { | 66. <i>E. oblata.</i>      | { | 67. <i>E. Bernardi.</i> | { | 68. <i>E. Prainiana.</i> | { | 69. <i>E. Pearsoniana.</i> | { | 70. <i>E. lævicaulis.</i> | { | 71. <i>E. Goodenovii.</i> |
| {  | 64. <i>E. nigricans.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 65. <i>E. inophylla.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 66. <i>E. oblata.</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 67. <i>E. Bernardi.</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 68. <i>E. Prainiana.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 69. <i>E. Pearsoniana.</i>  |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 70. <i>E. lævicaulis.</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |
| {  | 71. <i>E. Goodenovii.</i>   |   |                              |   |                             |   |                            |   |                         |   |                          |   |                            |   |                           |   |                           |

Leaves 2 inches or less in length, rarely as much as 2.5 in.—

Glabrous—

- |                                     |   |   |                               |   |                           |   |                          |   |                      |
|-------------------------------------|---|---|-------------------------------|---|---------------------------|---|--------------------------|---|----------------------|
| Fruit oblong ... ..                 | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>72. <i>E. linocierioidea.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>73. <i>E. myrtifolia.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>74. <i>E. Stapfiana.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>75. <i>E. Wrayi.</i></td></tr> </table> | { | 72. <i>E. linocierioidea.</i> | { | 73. <i>E. myrtifolia.</i> | { | 74. <i>E. Stapfiana.</i> | { | 75. <i>E. Wrayi.</i> |
| {                                   | 72. <i>E. linocierioidea.</i>   |   |                               |   |                           |   |                          |   |                      |
| {                                   | 73. <i>E. myrtifolia.</i>   |   |                               |   |                           |   |                          |   |                      |
| {                                   | 74. <i>E. Stapfiana.</i>  |   |                               |   |                           |   |                          |   |                      |
| {                                   | 75. <i>E. Wrayi.</i>  |   |                               |   |                           |   |                          |   |                      |
| Fruit globose or sub-globose ... .. | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>76. <i>E. setosa.</i></td></tr> </table>   | { | 76. <i>E. setosa.</i>         |   |                           |   |                          |   |                      |
| {                                   | 76. <i>E. setosa.</i>   |   |                               |   |                           |   |                          |   |                      |

Flowers numerous, less than 2 in. long, in terminal or axillary panicles, oblong or clavate, tapered gradually to the base, rarely narrowed into a short pseudo-stalk, all without a true pedicel except sometimes the terminal ones of the branchlets.

- |                                   |  |   |                          |   |                             |   |                           |
|-----------------------------------|--|---|--------------------------|---|-----------------------------|---|---------------------------|
| Leaves obtuse or sub-acute ... .. | <table border="0"> <tr><td style="font-size: 2em;">{</td><td>77. <i>E. inasensis.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>78. <i>E. subdecussata.</i></td></tr> <tr><td style="font-size: 2em;">{</td><td>79. <i>E. punctulata.</i></td></tr> </table> | { | 77. <i>E. inasensis.</i> | { | 78. <i>E. subdecussata.</i> | { | 79. <i>E. punctulata.</i> |
| {                                 | 77. <i>E. inasensis.</i>   |   |                          |   |                             |   |                           |
| {                                 | 78. <i>E. subdecussata.</i>  |   |                          |   |                             |   |                           |
| {                                 | 79. <i>E. punctulata.</i>  |   |                          |   |                             |   |                           |

Leaves obtuse or sub-acute... ..	80. <i>E. bracteolata.</i>
	81. <i>E. venulosa.</i>
	82. <i>E. pseudo-subtilis.</i>
	83. <i>E. microcalyx.</i>
	84. <i>E. scoparia.</i>
	85. <i>E. myriantha.</i>
Leaves more or less acuminate ... ..	86. <i>E. verecunda.</i>
	87. <i>E. pseudo-subtilis</i> VAR. <i>sub-acuminata.</i>
	88. <i>E. Swettenhamiana.</i>
	89. <i>E. acuminatissima.</i>
	90. <i>E. Kunstleri.</i>
	91. <i>E. pustulata.</i>
	92. <i>E. Koordersiana.</i>
	93. <i>E. simulans.</i>
	94. <i>E. Curtisii.</i>

Flowers small, numerous, in short much-branched spreading cymose panicles mostly from the scars of fallen leaves, globular or nearly so, narrowed gradually to the base or abruptly contracted into a short pseudo-stalk, {

95. *E. operculata.*  
96. *E. nicobarica.*  
97. *E. Jambolana.*

1. *EUGENIA FORMOSA*, Wall. Pl. As. Rar. II. 6, t. 108: Wall. Cat. (in part) 3609. A tree, 20 to 30 feet high: young branches almost terete, with pale bark. *Leaves* coriaceous, ovate-oblong to lanceolate-oblong, much tapered to the acute apex, sometimes in threes; the base rounded, slightly cordate; upper surface pale, olivaceous (when dry), the lower paler; both quite smooth; main-nerves 12 to 20 pairs, rather strong, ascending, rather straight, interarching .2 to .3 in. from the edge; length 8 to 12 occasionally to 18 in.; breadth 3 to 5 in.; petiole about .2 in. *Flowers* about 2 in. across (excluding the stamens), pale rose-coloured, on pedicels .3 to .5 in. long, bracteolate near the apex, in fascicles of three (occasionally solitary), usually from the branches below the leaves but sometimes terminal. *Calyx-tube* .6 to .75 in. long, clavate-turbinate, smooth; the 4 lobes broad, rounded, unequal, .5 in. broad and about half as long. *Petals* .5 in. long, almost orbicular. *Filaments* more than 1 in. long, very numerous, spreading. *Fruit* as large as a small apple, globose, contracted towards the base, crowned at the apex by the spreading calyx-lobes, white, smooth, 2-seeded, the pulp rather scanty. Duthie in Hook. fil. Fl. Br. Ind. II, 471; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 68; For. Fl. Brit. Burm. I, 492; Wight III. II, 14. *Jambosa formosa*, Walp. Rep. Bot. II, 191; Blume Mus. Bot. I, 92; Miq. Fl. Ind. Bat. I, Pt. 1, 412. *J. mappacea*, Korth. in Ned. Kruidk. Arch. I, 200. *E. somarangensis*, DC. Prod. III, 286.

PERAK: King's Collector 6254; *Scortechini*.

Only a few specimens of this are to be found from our area in the Herbaria at Kew and Calcutta, and they have all oblong-lanceolate leaves. In British India the form with ovate-oblong leaves is the commoner.

2. *EUGENIA PERAKENSIS*, King n. sp. A glabrous tree, 50 to 70 feet high: young branches as thick as a swan-quill, brown when dry. *Leaves* coriaceous, oblong-elliptic, the apex sub-acute, narrowed gradually to the cordate, slightly oblique base; upper surface olivaceous when dry, the lower pale-brown; main-nerves 12 to 14 pairs, ascending, curving a little and interarching .2 to .4 in. from the edge, very prominent on the lower surface, faint on the upper; intermediate nerves and reticulations slender but distinct; length 12 to 18 in.; breadth 5 to 8 in.; petiole 3 in. very stout. *Flowers* 1 in. or more across, in fascicles of 6 to 8 from depressed tubercles on the smaller branches, on peduncles .5 in. long. *Calyx-tube* campanulate, .5 in. long, contracted into a pseudo-stalk at its junction with the peduncle: the mouth with 4 broad, rounded lobes less than 1 in. long. *Petals* orbicular, longer than the calyx-lobes. *Fruit* unknown.

PERAK: *King's Collector* 5595.

A species only once collected and the specimens have no fruit; somewhat resembling *E. macrocarpa*, Roxb., but with smaller flowers and larger leaves.

3. *EUGENIA JAVANICA*, Lamk. Dict. III, 200. A glabrous tree, 25 to 35 feet high: young branches terete, pale-brown. *Leaves* thinly coriaceous, elliptic-oblong, elliptic-lanceolate or elliptic, the apex acute or subacute, slightly narrowed to the rounded (sometimes slightly cordate) base; both surfaces pale-brown when dry: main-nerves slightly conspicuous on the lower surface, 8 to 12 pairs, slightly curved, spreading, interarching about .1 in. from the edge; length 4 to 8 in.; breadth 1.75 to 3.5 in.; petiole .1 to .2 in. *Flowers* 1 in. or slightly more in diam. (excluding the stamens) white, in axillary or terminal lax pedunculate few-flowered corymbose racemes: peduncle of racemes from 1 to 1.25 in. in length; pedicels of flowers .4 to .6 in. long. *Calyx-tube* clavate-turbinate, smooth, .35 to .5 in. long, tapering into a short pseudo-stalk, the 4 lobes broad, unequal, rounded, blunt, concave. *Petals* obovate-orbicular, larger than the sepals. *Filaments* slender, about .75 in. long. *Fruit* when quite ripe depressed-turbinate, about 1.5 in. long and 2 in. broad at the apex, pale-yellowish, 1- or few-seeded, the endocarp spongy. Duthie in Hook. fil. Fl. Br. Ind. II, 474; Kurz in Journ. As. Soc. Beng. XLVI, (1877), Pt. 2, 69; For. Fl. Brit. Burm. I, 494. *E. alba*, Roxb. Hort. Beng. 39; Fl. Ind. II, 493; Wall. Cat. 3612A, 3614 all the numbers. *Jambosa alba*, Rumph Herb. Amb. I, 127, t. 39; W. & A. Prodr. I, 332; Wight Ill. II, 14; Ic. t. 548; Miq. Fl. Ind. Bat. I, Pt. 1, 443 (*in part*). *J. samarangensis*, Korth. in Ned. Kruidk. Arch. I, 201; Blume Mus. Bot. I, 95. *Jambosa macrophylla*, DC. Prod. III. 286 (*in part*). *Myrtus samarangensis*, Blume Bijdr. 1084. *Jambosa insignis*, Bl. Mus. Bot. I, 100. *Jambosa ambigua*, Bl. Mus. Bot. I, 96.



MALACCA: *Griffith* 2352, *Maingay* 748, *Hervey*. SINGAPORE: *Ridley* 8931. ANDAMAN and NICOBAR islands (very common). DISTRIB.—Java, *Zollinger*, 2nd Journey 808, etc.; Timor Laut, *Forbes* 334; New Guinea and many of the other islands of the Archipelago.

Distinguished in the group by its shortly petiolate leaves and pedunculate lax racemes which are often terminal.

VAR. *Roxburghiana*, Duthie in Fl. Br. Ind. II, 475; leaves almost sessile, cordate and amplexicaul at the base, the apex rounded. *E. decora*, Wall. Cat. 3608.

4. EUGENIA JAMBOS, Linn. Sp. Pl. 47. A shrub or small glabrous tree: young branches more or less four-angled, pale-brown, rather slender. *Leaves* thinly coriaceous, oblong-lanceolate, tapering to each end, the apex acuminate (sometimes almost caudate) the base more abruptly narrowed to the petiole; both surfaces pale-olivaceous when dry; the main-nerves distinct on the lower, 10 to 14 pairs, slightly curved, ascending, interarching in a rather faint nerve  $\cdot 1$  in. inside the edge, the secondary nerves rather distinct, one (sometimes two) between each pair of primaries; length 4 to 7 in.; breadth 1 to 1.6 in.; petiole  $\cdot 25$  in. *Flowers* 2.5 to 3 in. in diam., in few-flowered terminal racemes shorter than the leaves, the pedicels  $\cdot 3$  to  $\cdot 4$  in. long. *Calyx-tube* turbinate,  $\cdot 5$  in. long. the lobes 4, broad, short, reflexed. *Petals* much larger than the calyx-lobes, obovate-rotund, about  $\cdot 5$  in. long; filaments 1.5 to 2 in. long, shorter than the style. *Fruit* ovoid or globular, 1.5 to 2 in. long, dull-yellow tinged with pink, smooth, endocarp fleshy and edible, crowned by the inflexed calyx-lobes. *Seeds* one or two. Roxb. Hort. Beng. 37; Fl. Ind. II, 494; Wall. Cat. 3615; Wight III. II, 14; Duthie in Hook. fil. Fl. Br. Ind. II, 474. Brandis For. Fl. 233; Kurz in Journ. As. Soc. Beng. XLVI. (1877) Pt. 2, 69; For. Fl. Brit. Burm. I, 495. *Jambosa vulgaris*, DC.; Blume Mus. Bot. I, 93; W. & A. Prodr. I, 332; Bot. Mag. 3356; Miq. Fl. Ind. Bat. I, Pt. 1, 425; Wight Ic. 435. *Myrtus Jambos*, Kunth; Korth. in Ned. Kruidk. Arch. I, (1846), 200; Blume Bijdr. 1085.—Rumph. Herb. Amb. I, 123; Rheede Hort. Mal. I, 27, f. 17.

Cultivated in most of the provinces: perhaps wild in Perak; *Scortechini*; *Maingay* 735. Cultivated also in British India.

Readily distinguished in this section by its narrow leaves attenuated to each end and few-flowered terminal racemes.

5. EUGENIA MALACCENSIS, Linn. Sp. Plantar. 470. A glabrous tree, 30 to 40 feet high; young branches almost terete (slightly compressed) with pale bark. *Leaves* coriaceous, with short but distinct petioles, narrowly elliptic-oblong to oblanceolate-oblong, the apex more or less suddenly acute, the base much tapered to the petiole: when dry the upper

surface olivaceous the lower pale-brown: main-nerves 10 to 12 pairs, slightly curved upwards, interarching to form a marginal nerve  $\cdot 1$  in. to  $\cdot 15$  in. from the edge; length 6 to 11 in.; breadth  $1\cdot 75$  to 3 in.; petiole  $\cdot 3$  to  $\cdot 5$  in. *Flowers* 1 to  $1\cdot 5$  in. in diameter, in sessile or shortly pedunculate fascicles of three from the branches below the leaves. *Calyx-tube* obovate about  $\cdot 5$  in. long, tapering into the quarter inch long ebracteolate pedicel; calyx-lobes 4, broadly rounded, coriaceous, not reflexed. *Petals* orbicular, with a broad claw, the edges thin, about  $\cdot 4$  in. in diam. (when dry). *Fruit* about the size of a hen's egg, obovate, turbinate to elliptic-ovoid, smooth and glossy, from pale-rose-coloured to dark-purple, crowned by the inflexed calyx-lobes, edible. *Seed* usually solitary. Duthie in Hook. fl. Fl. Brit. India. II, 471; Roxb. Fl. Ind. II, 483; Wall. Cat. 3611; Wight III. II, 14, t. 98; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 68; For. Fl. Brit. Burm. I, 493. *E. macrophylla*, Lam. Encyc. III. 196. *Jambosa malaccensis*, DC. Prod. III, 286; Korth. in Ned. Kruidk. (1847), 200; Bot. Mag. 4408; W. & A. Prodr. I, 332. *J. purpurascens*, DC. l.c. excl. syn. Roxb. *J. domestica*, Rumph. Herb. Amb. I, 121, t. 37 (not good) and 38, f. i; DC. l.c. 288; Blume Mus. Bot. I, 91; Miq. Fl. Ind. Bat. I, Pt. 1, 411. *Myrtus macrophylla*, Spreng.; Blume Bijdr. 1084. *M. malaccensis*, Spreng.; Blume l.c. 1083. —Burm. Fl. Ind. 114; Rheede Hort. Mal. I, 29, t. 18.

Doubtfully wild in any of the Provinces, but frequently cultivated as it also is in Burma, the Malayan Islands and British India.

The variety with very dark purple ovoid-elliptic fruit was described as a species by Roxburgh and has the following synonymy:—*Eugenia purpurea*, Roxb. Hort. Beng. 37; Fl. Ind. II, 483; Wight III. II, 14; Ic. II, 549. *Jambosa purpurea*, Wall. Cat. 3610. *J. domestica*, var. *purpurea*, Blume Mus. Bot. I, 92; Miq. l.c.—*J. nigra*, Rumph. Amb. 125, t. 38, fig. 1?

6. *EUGENIA PSEUDO-FORMOSA*, King n. sp. A glabrous shrub; young branches slender, sub-terete, compressed near the nodes, pale. *Leaves* sub-coriaceous, elliptic or oblong-elliptic, acuminate, slightly narrowed to the rounded base; upper surface olivaceous-brown when dry, the lower pale yellowish-brown; main-nerves 14 to 20 pairs, curving upwards, interarching  $\cdot 15$  to  $\cdot 25$  in. from the margin; length 7 to 12 in.; breadth 3 to 5 in.; petiole  $\cdot 1$  or  $\cdot 2$  in. long, or absent. *Flowers* white tinged with red, sessile in densely crowded fascicles or very condensed cymes at the apices of the branches,  $\cdot 6$  in. in diam., the buds globular. *Calyx*  $\cdot 4$  in. long; the tube cylindrical-campanulate, the mouth with 4 broad blunt lobes becoming hardly triangular. *Petals* orbicular. *Style*  $1\cdot 5$  in. long. *Stamens* and *fruit* unknown.

PERAK: Wray 1809, 3581; King's Collector 3401, 5389, 6254; Scortechini. SINGAPORE: Ridley 9520.

A species resembling *E. formosa* in its shrubby habit and its leaves; the latter are however thinner in texture and they have more numerous nerves. The flowers of this are however sessile fasciculate and much smaller in size. *Wray* 3688 and *Ridley* 9628, which has its clavate flower buds in very short racemes, is probably a form of this species. *E. samarangensis* DC. much resembles this but has its flowers in small racemes or panicles.

7. *EUGENIA PAPILOSA*, Duthie in Hook. fil. Fl. Br. Ind. II, 495. A tree 40 to 50 feet high: young branches stout about as thick as a goose-quill, terete, brown, those of the inflorescence 4-angled. *Leaves* coriaceous, somewhat amplexicaul, oblong-elliptic sometimes obovate-elliptic or lanceolate, subacute or blunt, narrowed to the cordate auriculate sub-amplexicaul base; upper surface smooth, shining, dark-olivaceous or blackish-brown; under surface reddish-brown; main-nerves 16 to 20 pairs, curving slightly upwards and interarching '1 to '2 in. from the edge, very prominent on the lower surface like the mid-rib, inconspicuous or depressed on the upper; length 8 to 12 in.; breadth 3 to 5 in.; petiole less than '1, very thick. *Panicles* pedunculate, crowded at the apices of the youngest shoots or axillary, shorter than the leaves: the branches mostly short, divaricate, scurfy like the branchlets. *Flowers* (the stamens included) '6 in. long, sessile and collected in globose-clavate bracteate heads of 5 to 8 at the apices of the branchlets; the bracts oblong, blunt, deciduous. *Calyx* '35 in. long, funnel-shaped, narrowed above the middle to a pseudo-stalk; the limb wide and with 4 broadly triangular, unequal, reflexed, blunt lobes. *Petals* orbicular, three times as long as the calyx-lobes, not much shorter than the stamens. *Fruit* unknown. *E. anacardifolia*, King MSS.

MALACCA; *Manigay* (K.D.) 737; *Holmberg* 873. SINGAPORE: *Ridley* 3829. PERAK: *Scortechini*; *King's Collector* 2813, 5869, 8475.

8. *EUGENIA DENSIFLORA*, Duthie in Hook. fil. Fl. Br. Ind. II, 473. Shrubby, occasionally arboreous, glabrous: young branches compressed, pale-brown. *Leaves* coriaceous, narrowly elliptic-oblong, acuminate, the base cuneate, both surfaces glabrous, shining, finely reticulate, the upper olivaceous (when dry) the lower pale-brown; main-nerves 12 to 20 pairs, slender but distinct on both surfaces (when dry), ascending slightly, curved and interarching '3 to '4 in. from the edge, a second series of short arches being interposed between these and the margin; length 5 to 8 in.; breadth 1.75 to 2.5 in.; petiole '35 to '5 in. *Panicles* terminal, many-flowered, compact; the branchlets numerous and few-flowered. *Flower-buds* clavate, about '5 in. long just before expansion. *Flowers* about '75 in. across, white, much tinged with red. *Calyx-tube* funnel-shaped, '3 to '4 in. long, jointed to a stout pedicel shorter than itself; the 4 lobes, '15 in. long, unequal, broad, rounded. *Petals* much larger than the calyx-lobes, sub-orbicular, much shorter than the

stamens. *Fruit* as large as a cherry, rose-coloured, globular, with a tough smooth epicarp, the apex crowned by the large calyx-lobes. *Seed* one, rarely two. *Jambosa densiflora*, DC. Prod. III, 287; Korth. in Ned. Kruidk. Arch. I, 200; Blume Mus. Bot. I, 93; Miq. Fl. Ind. Bat. I, Pt. 1, 416. *Myrtus densiflora*, Blume Bijdr. 1087. *Eugenia corymbosa*, Roxb. Fl. Ind. III, 497; Wight Ic. 627.

MALACCA: *Maingay* (K.D.) 760/1 762/2 (p 758). PERAK: *King's Collector* 738, 4355, 4682, 5721, 5855, 5868, 7065, 8102, 10940; *Scortechini* 149, 743; *Wray* 544. SINGAPORE: *Ridley* 356, 5072. PAHANG: *Ridley* 2646. PENANG: *Curtis* 3431. DISTRIB.—Sumatra, Java.

A very handsome species somewhat resembling *E. Jambos*, L. but distinguished by its dense terminal panicles of flowers which are individually smaller than those of that species, also by its broader leaves, and smaller fruit; allied to *E. pendens*, Duthie and *E. garcinifolia*, King.

9. *EUGENIA PLUMBEA*, King n. sp. A glabrous tree; young branches only as thick as a crow-quill, 4-angled, with dark bark. *Leaves* thinly coriaceous, lanceolate, acuminate, somewhat narrowed at the base; both surfaces of a dull leaden colour when dry, the upper shining, the lower dull; main-nerves 10 to 12 pairs, prominent on the lower, depressed on the upper surface; length 3 to 4 in.; breadth 1 to 1.5 in.; petiole 1 in. *Flowers* about .75 in. in diam., greenish-white, in terminal or axillary shortly pedunculate racemes of about three. *Calyx* .6 in. long, campanulate or widely funnel-shaped, suddenly contracted just above its insertion on the short pedicel; the mouth wide, divided into four broad, rounded segments .15 in. long. *Petals* rotund-reniform, longer than the calyx-teeth, shorter than the stamens. *Fruit* unknown.

PERAK: on Gunong Pateh, elevat. 3400 feet; *Wray* 479.

A species resembling this has been collected in Borneo by Mr. Ridley (Herb. Ridley 9071).

10. *EUGENIA SCORTECHINII*, King n. sp. A glabrous shrub or tree: young branches thicker than a crow-quill, boldly 4-angled, winged below the nodes. *Leaves* scantily pellucid-dotted, sub-coriaceous, ovate-oblong to oblong-lanceolate, acute rarely acuminate, narrowed to the rounded occasionally minutely cordate base; both surfaces brown when dry, the lower paler; main nerves 7 to 10 pairs, prominent on the lower surface, curving upwards, and joining to form a bold nerve .2 in. from the edge, between which and the edge is a second series of minute arches; length 4 to 6 in.; breadth 1.35 to 2.35 in.; petiole .15 in. sometimes absent. *Racemes* terminal and in the upper leaf-axils, corymbose, condensed, very much shorter than the leaves, 3- to 9-flowered. *Flowers* pale-red, with some yellow in the centre, about .65 in. in diam., on very short pedicels. *Calyx* shortly and widely campanulate, .4 in. long,

smooth, the mouth with very broad short unequal lobes, very little contracted at the base. *Petals* red, orbicular, longer than the calyx-lobes, much shorter than the stamens. *Fruit* broadly oblong, the apex truncate and crowned by the thick, deep, cup-shaped calyx, about .5 in. long, the base abruptly contracted into a short pseudo-stalk.

PERAK: *Scortechini* 649; *King's Collector* 4734, 7801, 10076.  
MALACCA: *Manigay* (K.D.) 736.

This resembles *E. diospyrifolia*, Wall., but that species has long-stalked flowers, with a narrower calyx-tube, and the nervation of the leaves is different. This also resembles *E. coarctata*, Blume, which however differs in having pale terete young branches and larger leaves, and *E. æmula*, Blume, from which it differs in the number of the nerves of the leaves and in its thicker young branches. From *E. macrocarpa*, Roxb., this differs in its much thinner quadrangular branches and much smaller flowers and fruit.

VAR. *parvifolia*; *leaves* narrowly oblong-lanceolate, only from 3 to 6 in. long and .8 to 1.25 in. broad.

PERAK: *King's Collector* 3348, 10437.

11. *EUGENIA MOLLIS*, King n. sp. A hairy shrub or small tree: young branches slender, pale-brown, 4-angled like the rachis and branches of the panicle but not winged, covered with short, thick, brown hairs. *Leaves* sub-coriaceous, oblong-lanceolate, the apex finely acuminate, slightly narrowed to the rounded, slightly cordate base; upper surface pale olivaceous-brown, subglabrous; the lower darker and everywhere covered with hairs like those on the young branches and inflorescence; length 8 to 12 in.; breadth 1.75 to 4 in.; petiole .1 to .2 in. *Panicles* terminal, shortly pedunculate, nearly as long as the leaves; the branches spreading and more or less trichotomous at their extremities. *Flowers* numerous but not crowded, about .5 in. across when expanded. *Calyx-tube* .4 in. long, clavate, densely and minutely scurfy-hairy tapering much to the short pedicel; the mouth .3 in. across, divided into 4 subequal rounded lobes about .1 in. long, their edges thin and glabrous. *Petals* orbicular, white, much longer than the calyx-lobes. *Fruit* ovoid-globose, crowned by the cupular calyx, covered with deciduous scurf-like hairs, .6 in. long.

PERAK: *King's Collector* 2686, 2808, 5572, 8387; *Wray* 2372.  
DISTRIB.—Sumatra, *Forbes* 1475.

12. *EUGENIA QUADRATA*, King n. sp. A glabrous tree, 20 to 30 feet high: young branches as thick as a goose-quill, acutely 4-angled and narrowly winged, pale-brown. *Leaves* thinly coriaceous, narrowly oblong, much acuminate, slightly narrowed and cordate at the rounded base; upper surface pale olivaceous-brown when dry, the lower darker brown and often not olivaceous; main-nerves 20 to 25 pairs, slender,

distinct, interarching .1 in. from the margin; the reticulations minute; length 8 to 10 in.; breadth 1.75 to 2.75 in.; petiole very short .05 in. long. *Cymes* very short, glomerulate, 3-flowered, pedunculate, solitary and axillary or in groups of 3 or 4 and terminal, about 2 to 3 in. long; their peduncles compressed, 1 to 1.5 in. long. *Flowers* white, about .75 in. in diam.: *calyx-tube* .5 in. long, widely campanulate, suddenly contracted into a long pseudo-stalk, epedicellate; calyx-lobes 4, unequal, broad, rounded, only .1 in. long or less, reflexed. *Petals* orbicular, much larger than the calyx-lobes. *Stamens* slightly exceeding the petals. *Fruit* unknown.

PERAK: *King's Collector* 5547.

In shape and nervation the leaves of this somewhat resemble those of *E. mollis*, King.

13. *EUGENIA SCALARINERVIS*, King n. sp. A glabrous tree, 20 to 30 feet high: young branches nearly as thick as the little finger, slightly compressed, pale. *Leaves* coriaceous, elliptic-ovate, sub-acute, the base rounded and cordate; upper surface brown slightly tinged with olivaceous (when dry), the lower much paler; main-nerves 22 to 30 pairs, very prominent on the lower and depressed on the upper surface, curving very slightly upwards and interarching .15 in. from the margin, the intermediate nerves rather distinct, the reticulations few and large; length 10 to 14 in.; breadth 5 to 7 in.; petiole about .3 in., stout, wrinkled when dry. *Flowers* in much contracted few-flowered terminal racemes, 1.5 in. or more across. *Calyx-tube* magenta-coloured (*vide collector*), smooth, .75 in. long, contracted at the base into a pseudo-stalk .15 in. long and jointed to a pedicel .15 in. long; the mouth wide, divided into 4 broadly-triangular teeth .15 in. long. *Petals* unknown. *Style* about 1 in. long, the stamens shorter. *Fruit* (unripe) globular-ovoid, crowned by the large, wide-tubular, 4-lobed calyx-limb .75 in. long.

PERAK: *King's Collector* 8200; *Ridley* 3095.

The specimens of this very fine species are scanty and imperfect. It is distinguished by the great size of its leaves and by the large number and the prominence of their sub-horizontal nerves.

14. *EUGENIA PERGAMENTACEA*, King n. sp. A tree?; young branches terete, as thick as a quill, pale-brown. *Leaves* chartaceous-coriaceous, narrowly elliptic-oblong, abruptly and shortly acuminate, the base cuneate; upper surface when dry shining and of a dull leaden-colour; the lower brown, both finely and transversely reticulate; main-nerves 28 to 32 pairs, very regular, straight, slightly ascending, interarching .15 in. from the margin, prominent on the lower, depressed on the upper surface; length 12 to 16 in.; breadth 4 to 6 in.; petiole .5

in., laterally compressed. *Panicles* 3 or 4 inches long, solitary in the leaf-axils or in groups of 2 or 3 at the apices of the branches; the branchlets few, short, spreading, bearing 3 or 4 flowers at their apices. *Flowers* .6 in. in diam.; depressed globular in bud. *Calyx-tube* shortly and widely campanulate, suddenly contracted into a pseudo-stalk .1 in. long; the teeth 4, short, unequal, rounded, inflexed. *Petals* 4, orbicular-ovate, pellucid-dotted, not much longer than the stamens, free. *Fruit* globular, smooth, crowned by the short calyx-cup, 1 in. in diam., black when dry. *Syzygium subdecussatum*, Wall. Cat. 5589 *in part*.

PENANG: *Curtis* 1440.

Since the time of Wallich who issued it along with his *Syz. subdecussatum* this has been collected by Mr. Curtis only. The elongate leaves of parchment-like texture with many straight very regular nerves and short panicles and globular fruit distinguish it.

15. *EUGENIA DYERIANA*, King n. sp. A tree, 40 to 50 feet high; young branches as thick as a goose-quill; young branches terete below, compressed near the apex, dark-brown. *Leaves* thickly coriaceous, elliptic, (oblong in the variety), slightly narrowed at each end; both surfaces dark-brown when dry and shining; the upper with midrib and main-nerves impressed, the reticulations invisible; the lower of a warmer brown colour, the main-nerves and midrib (but not the reticulations) very bold: main-nerves 13 to 20 pairs, slightly curved, ascending, interarching .1 in. or more from the recurved edge; length 7 to 9 in.; breadth 3.5 to 5 in.; petiole .4 to .6 in.; short. *Panicles* narrow, few-flowered, much shorter than the leaves, terminal or from the upper leaf-axils, usually pedunculate: branches few, short, spreading, much compressed, the flowers crowded at their apices. *Flowers* .4 in. across when expanded, sessile, obovoid in bud. *Calyx* campanulate, .3 in. long, abruptly constricted into a very short pseudo-stalk, the mouth wide and with 4 small rounded lobes. *Petals* 4, free, not calyptrate, orbicular. *Stamens* white, only .25 in. long. *Fruit* (unripe) globular, smooth, crowned by the small, short, circular remains of the calyx, .75 in. in diam.

PERAK: *Scortechini* 2018; *Wray* 2094; *King's Collector* 6196, 6404, 6767.

VAR. *oblonga*; leaves oblong or narrowly oblong-elliptic, 4 to 8 in. long and 1.25 to 2.75 in. broad; panicles nearly as long as the leaves.

PERAK: *King's Collector* 7669.

A species near *E. Clarkeana*, King, but with larger leaves with more nerves, larger flowers but smaller panicles.

16. *EUGENIA HEMSLEYANA*, King n. sp. A tree, 30 or 40 feet high: young branches thinner than a goose-quill, the bark yellowish-grey.

*Leaves* large, rigidly coriaceous, elliptic or elliptic-oblong, shortly and bluntly acuminate, slightly narrowed at the base; both surfaces, but especially the upper, dark when dry, the upper shining with the nerves impressed, the lower somewhat paler, dull and the nerves prominent; main-nerves 20 to 25 pairs, slightly curved upwards and interarching .1 to .2 in. from the edge: length 6 to 9 in.; breadth 3 to 3.5 in.; petiole .3 to .35 in. stout. *Panicles* mostly on long 4-angled striate peduncles, terminal, shorter than the leaves, crowded in groups of 6 to 8 at the apices of the twigs; branches few, a long one often from the very base, the remaining short (mostly under one inch), all compressed, and each bearing at its apex a dense capitule of sessile flowers .3 or .4 in. across. *Calyx* .15 in. long, campanulate, contracted and ribbed at the base but not forming a pseudo-stalk; the mouth with 4 broad, rounded, concave teeth. *Fruit* (unripe) globular with numerous bold vertical ribs, the apex crowned by the calyx-lobes.

PERAK: *Wray* 1803; *King's Collector* 6114, 8697.

The species nearest to this is *E. pergamentacea* which however has larger leaves, fewer panicles and considerably larger flowers.

17. *EUGENIA PACHYPHYLLA*, Kurz in Journ. As. Soc. Beng. XLII, Pt. 2, 332. A glabrous tree: the young branches slender, terete, pale-yellow when dry. *Leaves* coriaceous, obovate to obovate-oblong, the apex abruptly and broadly apiculate, the base cuneate; upper surface olivaceous-brown when dry, the lower pale-brown: main-nerves 12 to 15 pairs, slender but distinct on the lower surface, spreading, slightly curved and interarching about .1 in. from the margin, length 3.5 to 5 in.; breadth 2 to 2.25 in.; petiole .2 to .3 in. *Flowers* .3 in. in diam., in pedunculate few-flowered corymbose racemes or panicles axillary or clustered at the apices of the branches, the common peduncles 1 to 1.5 in. long, those of the branchlets (in the panicles) half as long, all 4-angled, the flowers themselves sessile at the apices, the buds globose-clavate. *Calyx* in the expanded flower .4 in. long, widely funnel-shaped, suddenly contracted into a cylindric tube, the 4 lobes of the mouth about .2 in. long, broad, rounded. *Petals* sub-orbicular, larger than the calyx-lobes. *Stamens* .4 in. long. *Fruit* unknown. Kurz For. Fl. Br. Burma I, 490; Duthie in Hook. fil. Fl. Br. Ind. II, 477.

MALACCA: *Griffith* (K.D.) 2371/1: *Maingay* (K.D.) 742. DISTRIB.—Burma, *Brandis* 1337.

A species poorly represented at Kew and Calcutta: recognised by its obovate leaves, pale yellow branches, and few-flowered, pedunculate, corymbose racemes or panicles.

18. *EUGENIA LEPIDOCARPA*, Wall. Cat. 3618. A glabrous tree, 40 to 50 feet high: young branches greyish, terete. *Leaves* coriaceous,  
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ovate-oblong to broadly ovate, rarely obovate-oblong, the apex blunt with a short abrupt point, or sub-acute, the base slightly cuneate, both surfaces deep-olivaceous brown the upper somewhat shining, the lower dull: main-nerves 10 to 12 pairs, rather straight, slightly ascending and interarching with an intramarginal nerve close to the edge, not conspicuous on either surface: length 3 to 4.5 in.; breadth 1.75 to 2.75 in.; petiole 3 to 5 in. *Panicles* mostly in clusters at the apices of the branches, pedunculate, or shorter than the leaves; branchlets 4-angled, spreading, few-flowered, the flowers sessile, or nearly so, clustered at the apices, .25 to .3 in. in diam. *Calyx* clavate-rotund, about .2 in. long just before expansion, vertically ribbed, tapering to the base; the lobes 4, unequal, less than .1 in. long, broad. *Petals* rotund, larger than the calyx-lobes. *Fruit* globular-ovoid crowned by the cupular calyx, vertically ribbed, .4 in. in diam. (unripe). Duthie in Hook. fil. Fl. Br. Ind. II, 466; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 68. *E. grandis*, Wight var. *lepidocarpa*, For. Fl. Br. Burma I, 490.

SINGAPORE: Ridley 1643, 4633, 4657, 4972, 6307, 6308, 8408; Wallich 3618; Walker; Hullet; King. MALACCA: Griffith 2369, 2376, 2373, 2369, 2416; Maingay 725, 757, 759; Hervey; Derry. PERAK: Wray 415, 3907, 3914, 3908; King's Collector 10042. **DISTRIB.**—Burma.

A species in many respects resembling *E. grandis*, Wight, but with smaller less shining leaves with fewer nerves and broader in proportion to length: shorter panicles, smaller flowers which moreover are mostly sessile, and smaller, ribbed fruit.

19. *EUGENIA GARCINIFOLIA*, King n. sp. A glabrous tree, 60 to 80 feet high; young branches slender, compressed, 6-ridged, brown. *Leaves* thickly coriaceous, elliptic, or elliptic-oblong, the apex with a short abrupt point, slightly narrowed to the sub-acute or rounded base, the edges recurved when dry: both surfaces (when dry) shining, conspicuously reticulate, pale-olivaceous brown, the upper rather the darker, main-nerves 10 to 12 pairs, rather prominent beneath, interarching irregularly .2 to .3 in. from the edge, some of the secondary nerves as prominent as the main ones; the reticulations minute but distinct; length 5 to 10 in.; breadth 2 to 3.5 in.; petiole .2 to .3 in. *Panicles* terminal, spreading, 3 or 4 in. across and scarcely as much long. *Flowers* probably on thick striate pedicels .25 in. long. *Calyx* narrowly campanulate, .5 in. long, the mouth with 4 unequal, short, rounded teeth. *Petals* orbicular. *Stamens* unknown. *Fruit* (young) globular-ovoid, crowned by the 4 triangular calyx-teeth.

PERAK: King's Collector 4541, 6974. SUMATRA: Scortechini 365.

A species allied to *E. densiflora*, Duthie, but with a less dense inflorescence and larger flower-buds. The leaves of this moreover are larger and thicker, the reticulations more marked and the edges recurved.

20. *EUGENIA CRENULATA*, Duthie in Hook. fil. Fl. Br. Ind. II, 490. A glabrous tree: young branches as thick as a goose-quill, terete, brown. *Leaves* thickly coriaceous, elliptic or elliptic-rotund, the apex rounded but with an abrupt short apiculus, the base cuneate; both surfaces (when dry), shining, the numerous reticulations and nerves distinct, the intramarginal nerve very close to the thickened and slightly crenate edge; under surface rather remotely black-pustulate; length 4 to 5 in.; breadth 2·5 to 4 in.; petiole ·3 to ·6 in. *Panicles* terminal, nearly as long as the leaves when in bud, (sometimes longer), corymbosely trichotomus, many-flowered; the peduncle and branches 4-angled, compressed, the nodes and the insertions of the flowers with minute bracteoles. *Flowers* (including the stamens) ·4 in. long, sessile. *Petals* 4, calyptrate. *Calyx* ·2 in. long, campanulate with a truncate mouth, contracted for half its length into a pseudo-stalk. *Fruit* unknown.

MALACCA: *Maingay* (K.D.) 739. SINGAPORE: *Ridley* 6232.

Recognisable at once by its crenate leaves; only twice collected and evidently rare. The Singapore specimen has thinner leaves and more slender longer panicles but, in other respects, it agrees with the Malacca one.

21. *EUGENIA GRANDIS*, Wight Ill. II, 17: Ic. t. 535. A glabrous tree, 30 or 40 feet high: young branches terete, dark-brown. *Leaves* thickly coriaceous, ovate-rotund to ovate-elliptic or elliptic-oblong, the apex rounded with or without an abrupt short blunt point, or subacute or acute, the base always narrowed to the petiole: both surfaces shining; and the upper olivaceous, the lower brown when dry: main-nerves 12 to 14 pairs, curving upwards very slightly and interarching, with an intermarginal nerve ·1 to ·2 in. from the edge: the secondary nerves and lax reticulations slender but distinct like the main ones on both surfaces, length 3·5 to 7 in.; breadth 1·75 to 4 in.; petiole ·4 to ·65 in. *Panicles* mostly clustered at the apices of the branches, more than half as long as the leaves, on peduncles ·6 to 1·25 in. long; the branches spreading, an inch or more long. *Flowers* sessile at the ends of the branches, ·35 to ·45 in. in diam. when expanded; the buds just before expansion clavate-rotund, ·5 in. long. *Calyx* clavate, tapered to the short pedicel, ·35 to ·5 in. long, smooth, the 4 lobes concave, orbicular, about ·2 in. long, two much larger than the others. *Petals* of the same size and shape as the calyx-lobes. *Filaments* ·35 in. long. *Ripe fruit* oblong-ovoid, 1·5 in. long, crowned by the cup-shaped calyx-limb, 1-seeded. Duthie in Hook. fil. Fl. Br. India I, 475; Kurz in Journ. As. Soc. Beng. XLVI, (1877), Pt. 2, 67; For. Fl. Brit. Burm. I, 489. *E. firma*, Wall. Cat. 3603; not of DC. *E. cymosa*, Roxb. Hort. Beng. 37; Fl. Ind. II, 492; not of Lam. *Jambosa grandis*, Blume Mus. Bot. I, 108. *J. firma*, Blume *l.c.* *J. urceolata*, Korth. in Miq. Fl. Ind. Bat. I,

Pt. 1, 418 in part. *Syzygium grande*, Walp. Repert. II, 180; not of Wall. Cat. 3554. *S. firmum*, Thwaites Enum. 417. *S. montanum*, Thwaites l.c. 116.

MALACCA: Griffith (K.D.) 2368, 2369, 2370, 2371; Maingay 730, 723. SINGAPORE: Ridley 4633; Hullet. LANGKAWI: Curtis. PENANG: Curtis 7515. DISTRIB.—British India in Burma, Chittagong, Sylhet and Assam.

A species easily recognised by its thick glossy reticulate leaves, large (mostly) terminal panicles with large flower-buds and ovoid-cylindric smooth fruit crowned by the cup-shaped calyx-lobes.

Included under this both by Duthie in the Flora of British India and by Trimen in his Flora of Ceylon, is a Ceylon plant (Thwaites C.P. 2694 which he named *S. insigne*). This plant has quite the leaves of *E. grandis*, but the flower buds are much larger and if flowers and fruit were available it would probably turn out to be specifically distinct. *E. grandis*, Wight, is allied closely to *E. lepidocarpa*, Wall.

22. *EUGENIA THUMRA*, Roxb. var. *PENANGIANA*, King. A medium-sized tree; young branches somewhat thinner than a goose-quill; the bark rough, brown. *Leaves* coriaceous, oblong-elliptic or oblong-lanceolate, sub-acute or bluntly and very shortly acuminate, the base cuneate; both surfaces dull; the upper dark leaden-brown, the nerves and midrib impressed; lower surface dark-brown, the nerves and midrib prominent; main-nerves 15 to 20 pairs, curving upwards, interarching  $\cdot 1$  in. from the edge; length 4 to 5 in.; breadth 1.8 to 2 in.; petiole  $\cdot 3$  to  $\cdot 5$  in. *Panicles* nearly as long as the leaves, terminal and axillary, pedunculate, lax; the branches numerous, spreading, 4-angled like the peduncle, the smaller compressed. *Flowers*  $\cdot 35$  in. long (including the stamens), sessile, white, crowded, 5 or 10 together at the apices of the ultimate branchlets, clavate in bud. *Calyx* funnel-shaped, narrowed for half its length into a ribbed pseudo-stalk, the mouth with 4 broad, suborbicular lobes. *Fruit* unknown.

PENANG: Curtis 2410.

This differs from the typical *E. Thumra*, Roxb., in having narrower leaves with fewer nerves and rather shorter panicles the branches of which are more acutely 4-angled. Fruit of this is unknown: when found it may yield characters warranting the separation of this as a distinct species.

23. *EUGENIA GRIFFITHII*, Duthie in Hook. fil. Fl. Br. Ind. II, 481. A tree, 50 to 80 feet high; young branches thinner than a goose-quill, their bark brown and rather rough. *Leaves* coriaceous, oblong or narrowly elliptic, narrowed about equally at base and apex, both surfaces dark-brown when dry, shining; main-nerves 15 to 20 pairs, spreading, rather straight, interarching  $\cdot 1$  in. from the edge, depressed on the upper and prominent on the lower surface, reticulations small, indistinct; length 4.5 to 6 in.; breadth 2 to 2.5 in.; petiole  $\cdot 2$  to  $\cdot 3$  in.

*Panicles* small, racemose, in clusters of 6 to 8 at the apices of the branches, few-flowered, unequal in length but all shorter than the leaves and on more or less long, compressed, dark-coloured peduncles; the branches few, unequal in length but all under an inch, compressed; flowers in threes, sessile at the apices of the branchlets, the buds clavate. *Calyx* campanulate, .25 in. long, constricted for more than half its length into a thick pseudo-stalk: the mouth with 4 broad, rounded lobes. *Petals* 4, orbicular not calyptrate. *Fruit* (unripe) globular-ovoid, slightly corrugated, crowned by the small circular remains of the calyx.

MALACCA: *Griffith* (K.D.) 2375. PERAK: *Wray* 2713; *King's Collector* 6192. SINGAPORE: *Ridley* 4980, 4981, 7951.

24. *EUGENIA CLARKEANA*, King, n. sp. A tree 30 to 50 feet high; young branches as stout as a quill, terete, compressed near the nodes, brown. *Leaves* coriaceous, elliptic-oblong to elliptic, very shortly acuminate, gradually narrowed from about or below the middle to the acute base; upper surface dark-brown, shining, not reticulate, the nerves faintly impressed; lower liver-coloured, rather dull, with numerous small pustules, the 12 to 16 pairs of curved main-nerves slightly prominent, the intramarginal nerves about .1 in. distant from the slightly recurved edge, reticulations invisible; length 4.5 to 8 in.; breadth 1.75 to 3 in.; petiole .3 to .35 in. *Panicles* mostly terminal, shorter than the leaves, pyramidal, with many 4-angled, often compressed branches. *Flowers* sessile, in densely crowded capitules at the apices of the branchlets, about .35 in. across when expanded, white. *Petals* 4 or 5, free, broadly oblong, not calyptrate. *Calyx* widely campanulate, nearly .2 in. long, constricted at the base, rugulose; its mouth with 4 broad, shallow, blunt lobes. *Fruit* globular and 1-seeded or depressed-reniform and 2-seeded, vertically corrugated when young, rugulose when ripe, shining, black, crowned by the small circular remains of the calyx; the globular form .75 in. or more in diam., the reniform form about 1 in. long and 1.35 in. broad; pulp none.

PERAK: *Scortechini* 205; *King's Collector* 3349, 3491, 3573, 6822, 7811.

Allied to *E. Griffithii*, Duthie, but with a single large terminal panicle instead of a number of small ones and with smaller flowers.

25. *EUGENIA CORRUGATA*, King n. sp. A tree, 30 to 60 feet high; young branches terete but compressed at the apices thinner than a goose-quill, brown. *Leaves* as in *E. Clarkeana*, but the main-nerves not depressed on the upper surface. *Panicles* terminal, short and few-branched; the branches terete. *Flowers* not seen. *Fruit* globular, much corrugated and vertically ridged, especially towards the base and

apex, depressed-globose, the rind .25 in. thick, when fully ripe, greenish-yellow, and 2 to 3 in. in diam.

PERAK: *King's Collector* 5298, 6987.

26. *EUGENIA PENDENS*, Duthie in Hook. fl. Fl. Br. Ind. II, 475. A small tree with pendent branches: young branches compressed, slender, brown. *Leaves* thinly coriaceous, pellucidly dotted, narrowly oblong-elliptic or elliptic, occasionally somewhat oblanceolate, the apex shortly and rather abruptly acuminate, the base cuneate; both surfaces olivaceous when dry: main-nerves 10 to 12 pairs, slender, ascending, slightly curved, interarching .2 in. from the margin, secondary nerves and reticulations indistinct; length 5 to 7 in.; breadth 1.4 to 3 in.; petiole .3 to .35 in. *Panicles* terminal, about 2 in. in diam., condensed, the branchlets about 5-flowered. *Flower-buds* globose-clavate, .5 in. long just before expansion. *Flowers* when expanded nearly .5 in. across. *Calyx-tube* narrowly funnel-shaped, jointed to a pedicel shorter than itself: lobes short, rounded, subequal, reflexed. *Petals* orbicular, longer than the calyx-lobes. *Stamens* .75 in. long. *Fruit* depressed-globular, green flushed with red, smooth, crowned by the short reflexed calyx-lobes, 1 in. in diam.

MALACCA: *Griffith* 2349; *Maingay* 747; *Hervey*. JOHORE: *Ridley* 4200. SINGAPORE: *Ridley* 8048, 8447. PERAK: *Scortechini* 1809, 2021; *Wray* 3537. PENANG: *Ridley* 10242. DISTRIB.—Sumatra, *Forbes* 1377.

A species allied to *E. densiflora*, Duthie, but with leaves of thinner texture, with fewer nerves and no dots. The panicles are also much shorter, fewer-flowered, and the flowers are smaller.

27. *EUGENIA BURKILLIANA*, King n. sp. A tree, 40 to 60 feet high: young branches thinner than a goose-quill, brown. *Leaves* coriaceous, oblong-lanceolate, shortly acuminate, the base cuneate; both surfaces (when dry) shining, pale brownish-green, the upper pitted, the lower with black dots, the edges slightly recurved; main-nerves 10 to 14 pairs, ascending and forming wide arches .1 to .15 in. from the edge, between which and the actual edge is a second intramarginal nerve, the secondary nerves and connecting reticulations almost as prominent, all thin and equally visible on both surfaces, all raised: length 2.25 to 3.5 in.; breadth .9 to 1.25 in.; petiole .35 to .5 in. *Panicles* terminal, sessile, many-flowered, broader than long, much branched, their tops broadly pyramidal, usually somewhat shorter than the leaves: branches thick, striate, 4-angled, slightly compressed. *Flowers* .7 in. long including the stamens, reddish before expansion, afterwards white, sessile, in threes at the ends of the branchlets, clavate in bud. *Calyx* .35 to .4 in. long, striate, funnel-shaped, its lower half gradually narrowed into a

pseudo-stalk: the mouth with 4 broad, rounded, shallow lobes. *Petals* orbicular, not calyprate. *Fruit* unknown.

PERAK: *Wray* 2785, 3070; *King's Collector* 4719, 6186.

A species near *E. oblongifolia*, Duthie, but differing in its leaves, which are of the same colour on each surface and have more distinct nerves and reticulations equally visible on both surfaces. The mouth of the calyx too is different, being deeply 4-lobed.

28. EUGENIA HELFERI, Duthie in Hook fil. Fl. Br. Ind. II, 480. A considerable tree: young branches indistinctly 4-angled, as thick as a crow-quill, with pale-brown deciduous bark. *Leaves* narrowly elliptic, tapered to each end, the apex obtusely and shortly acuminate, the base cuneate; both surfaces finely reticulate, pale olivaceous-green, the upper the darker: main-nerves about 12 pairs, faint, interarching close to the edge: the secondary nerves very faint; length 2.5 to 3.25 in.; breadth 1 to 1.25 in.; petiole .2 in. *Panicles* terminal, solitary, spreading, about half as long or sometimes quite as long as the leaves, the branchlets spreading, their bark exfoliating. *Flowers* in threes at the ends of the branchlets, about .5 in. across; buds clavate. *Calyx-tube* funnel-shaped, .2 in. long, attenuated at the base to a pedicel .2 in. long, the 4 lobes of the mouth unequal, short, broad, rounded. *Petals* broadly orbicular, much longer than the calyx-lobes and half as long as the stamens, bearing large pellucid glands on the exterior like the calyx-tube. *Fruit* unknown.

PENANG: *Curtis* 212. SINGAPORE: *Lobb*. PERAK: *King's Collector* 4181. *DISTRIB.*—Burma (Tenasserim) *Helper* 2418.

Closely allied to *E. ramosissima*, Wall., but with smaller flowers.

29. EUGENIA KURZII, Duthie in Hook. fil. Fl. Br. Ind. II, 478. *VAR. ANDAMANICA*, King. A tree: young branches as thick as a crow-quill, terete, the bark very pale. *Leaves* thickly membranous, oblong-elliptic, the base cuneate, the apex shortly caudate-acuminate; upper surface pale-olivaceous brown when dry, shining, remotely pitted, the main-nerves faint: lower surface paler brown, not olivaceous, the 10 or 12 pairs of main-nerves rather bold, arching upwards and interarching .15 to .2 in. from the edge; length 4.5 to 6 in.; breadth 1.85 to 2.25 in.; petioles .3 to .4 in. *Panicles* from the axils of the upper leaves, or terminal, shorter than the leaves, often broader than long, spreading, many-flowered; the branches 4-angled, pale. *Flowers* mostly in threes at the ends of the branchlets, .6 in. long (including the stamens). *Calyx* .15 in. long; widely campanulate, narrowed into a thick pseudo-stalk as long as itself; the mouth wide, with 4 broad, rounded, reflexed teeth. *Petals* 4, free, sub-orbicular, reflexed. *Stamens* four times as long as the calyx. *Fruit* unknown.

ANDAMAN ISLANDS, at Hobdaypore; *King's Collector*.

This differs from typical *E. Kurzii* in having narrower more acuminate leaves and longer stamens. The young branches moreover have paler bark. Fruit is as yet unknown, but when found it may afford characters to warrant specific rank for this.

30. *EUGENIA ANISOSEPALA*, Duthie in Hook. fil. Fl. Br. Ind. II, 481. A large tree: young branches terete, thinner than a goose-quill, brown, smooth. *Leaves* coriaceous, ovate to ovate-lanceolate, shortly acuminate, the base cuneate, both surfaces (when dry) dark-brown, the upper shining and with the nerves rather faint; the lower paler brown, the 12 to 14 pairs of curved main-nerves rather distinct, interarching 1 in. from the edge, the secondary nerves somewhat distinct; length 2·5 to 3·5 in.; breadth 1 to 1·75 in.; petiole 2 to 2·5 in. *Panicles* terminal, corymbose, usually shorter than the leaves, the branches numerous, spreading, rather crowded, 4-angled, the peduncle compressed. *Flowers* 5 in. long (including the stamens), sessile, clavate in bud, in threes at the apices of the branchlets. *Calyx* 3 in. long, campanulate-infundibuliform, its lower half contracted into a pseudo-stalk; the limb with 4 unequal, broad, rounded lobes (two being larger and sub-petaloid). *Petals* 4; not calyprate. *Fruit* unknown. *E. anisosepala*, Duthie in Hook. fil. Fl. Br. Ind. II, 481 in part.

MALACCA: *Griffith* (K.D.) 2380, 2381. *Maingay* (K.D.) 754, 753 (in part). MALACCA: *Derry* 289.

Mr. Duthie remarks that the Griffithian specimens above quoted differ somewhat from those of Maingay inasmuch as they have smaller flowers. With these Mr. Derry's single specimen agrees. Maingay's specimens have a much larger more spreading panicle, with smaller flowers. The material is very poor and I think it is likely that, when more is forthcoming, it will be found that two species are mixed under the name *E. anisosepala*, Duthie.

31. *EUGENIA GAGEANA*, King n. sp. A tree, 40 to 50 feet high: young branches thinner than a goose-quill, terete, compressed at the nodes, brown (when dry). *Leaves* thickly coriaceous, oblong-lanceolate, bluntly acuminate, the base cuneate; upper surface dull-brown, the midrib thin and depressed, the main-nerves faint: lower surface paler brown, the midrib thick and the reticulations and secondary nerves numerous and distinct; the main-nerves 12 to 18 pairs, curving upwards and interarching 1 in. from the edge: length 5 or 6 in.; breadth 1·5 to 2·25 in.; petiole 2·5 to 3 in. *Panicles* terminal, about half as long as the leaves, sessile, corymbose, many-flowered, branching from the base; branches stout, spreading, obtusely 4-angled. *Flowers* sessile, in threes at the apices of the branchlets, globose-clavate in bud. *Calyx* narrowly campanulate, rather abruptly narrowed into a pseudo-stalk about 0·5 in. in length. *Fruit* unknown.

PERAK: *King's Collector* 7563.

32. *EUGENIA HULLETIANA*, King n. sp. A tree, 20 to 25 feet high; young branches thicker than a crow-quill, terete, brown. *Leaves* thinly coriaceous, elliptic or elliptic-ovate, with an abrupt, broad, short, apical acumen, the base cuneate, the edge slightly recurved; upper surface somewhat shining, dull-olivaceous; the lower tinged with brown; main-nerves numerous, about .1 in. apart, rather straight, curving upwards at the ends only and there interarching less than .05 in. from the edge, faint on the upper surface and only slightly conspicuous on the lower, the midrib depressed on the upper surface convex on the lower: reticulations almost invisible on the upper, not prominent on the lower surface; length 3.25 to 4.5 in.; breadth 1.5 to 2 in.; petiole .3 to .4 in. *Panicles* axillary and terminal, as long or nearly as long as the leaves, rather lax, pedunculate; the branches few, spreading, 4-angled, compressed. *Flowers* pale-green, (the stamens white), in groups of three, sessile at the ends of the branches, about .5 or .6 in. long (including the stamens), clavate in bud. *Calyx* about .25 in. long, funnel-shaped, the lower two-thirds cylindrical and vertically ribbed; the mouth wide, divided into four broad, rounded lobes. *Petals* 4 sub-orbicular, reflexed, free. *Fruit* unknown.

PERAK: *King's Collector* 7470. *DISTRIB.*—Sumatra, *Ridley* 8973.

A species resembling in many respects *E. glauca*, King, but with larger flowers and differently veined leaves.

33. *EUGENIA CHLORANTHA*, Duthie in Hook. fl. Fl. Br. Ind. II, 487. A small glabrous tree: young branches thin, dark-brown, sub-terete. *Leaves* coriaceous, elliptic or ovate-elliptic, the apex shortly and abruptly acuminate, the base cuneate, both surfaces olivaceous-green when dry: main-nerves numerous, interarching less than .1 in. from the edge, thin but distinct, the secondary nerves and reticulations also distinct: length 4.5 to 6 in.; breadth 2 to 3 in.; petiole .3 to .35 in. *Panicles* much shorter than the leaves, axillary and terminal, divaricate, many-flowered, condensed, trichotomous, the branchlets compressed, 4-angled, short. *Flowers* .3 in. in diam. (excluding the stamens), sessile, clavate. *Calyx* .35 in. long, contracted into a thick, ridged pseudo-stalk for more than half its length, the mouth with 4 short thick, broad, rounded, spreading or reflexed lobes. *Petals* orbicular, greenish, not calyptrate. *Fruit* sub-globular, smooth, crowned by the prominent reflexed or spreading calyx-teeth, .3 to .4 in. in diam.

MALACCA: *Griffith* (K.D.) 2385; *Maingay* (K.D.) 733. SINGAPORE: *Ridley* 445, 3910, 5823, 9220. PAHANG: *Ridley* 1096. PENANG: *Curtis* 180, 1448; *Ridley* 7957, 7952, 10190. JOHORE: *Ridley* 9181. PERAK: *King's Collector* 1277, 4082, 4220, 4076, 6765, 5619, 7511, 8535. *DISTRIB.*—Sumatra, *Forbes* 3098.



Although the petals of this are greenish, the stamens are of a brilliant red colour and as these are more permanent than the petals the specific name is somewhat misleading. There are however some specimens in which the petals are distinctly stated by the collector to be red.

In the Herbarium the species is readily recognised by the large persistent spreading calyx-lobes which crown the fruit and by the greenish colour of the leaves.

34. *EUGENIA PENANGIANA*, Duthie in Hook. fil. Fl. Br. Ind. II, 486. A slender glabrous tree, 40 to 80 feet high: young branches sub-terete, ribbed, those of the inflorescence 4-angled, all pale when dry. *Leaves* coriaceous, lanceolate or oblong-lanceolate rarely oblanceolate, obtusely acuminate, the base cuneate; both surfaces yellowish when dry, the lower slightly paler; nerves numerous spreading not prominent on either surface; length 2 to 3 in. rarely 4 in.; breadth .75 to 1.75 in.; petiole .1 to .15 in. *Panicles* mostly terminal, but a few axillary, 1 to 3 in. long, on slender peduncles, the branchlets numerous divaricate, each bearing at its apex 3 to 5 sessile, white, clavate flowers .5 or .6 in. long. *Calyx* about .4 in. long (longer in fruit), funnel-shaped, abruptly tapering to the base, ribbed (when dry), the limb with 4 or 5 short often obscure teeth. *Petals* orbicular, equal in number to the calyx-lobes, free. *Stamens* short. *Fruit* elongate, gradually tapered to the base from the truncate apex, crowned by the cupular, entire calyx-limb, .5 or .6 in. long.

PENANG: *Maingay* (K.D.) 744; *Curtis* 193, 2790, 2972. PERAK: *Scortechini* 132, 184, 1368, 3410, 5651, 6965; *Wray* 3066. MALACCA: *Derry* 1177.

It is possible that two species may be covered by the preceding description as some of the specimens have smaller thinner leaves and flowers with more constricted pseudo-stalks than the type specimen (*Maingay* 744) on which Mr. Duthie founded the species.

35. *EUGENIA RIDLEYI*, King n. sp. A tree; young branches thinner than a goose-quill, terete, the bark brown, rather rough. *Leaves* thinly coriaceous, oblong- or ovate-lanceolate, acute, or acuminate, the base cuneate; both surfaces rather dull when dry, the upper dark olivaceous brown, the nerves impressed; the lower pale warm brown, the midrib and nerves very prominent; main-nerves 7 to 10 pairs, curving upwards and interarching far from the edge, the secondary nerves prominent but the reticulations obscure; length 3.5 to 4.5 in.; breadth 1.25 to 2 in.; petiole .4 to .5 in. *Panicles* axillary and terminal, half as long as the leaves, the terminal sometimes as long, broad, the branches few and spreading horizontally, compressed especially at the nodes. *Flowers* .3 in. long (including the stamens), green, sessile, the buds clavate; *calyx* .2 in. long, campanulate above, abruptly narrowed

for half its length into a minutely granular pseudo-stalk; the mouth with 4 large, rounded lobes. *Petals* not calyptrate, three times as long as the calyx-lobes, ovate-rotund and like the latter reflexed in flower. *Fruit* unknown.

SINGAPORE: (in the "garden jungle"), Ridley 3706, 6416, 6419, 5728, 6233. PENANG: Curtis 3010.

Notable for its green flowers.

36. *EUGENIA PYRIFOLIA*, Duthie in Hook. fil. Fl. Br. Ind. II, 487. A tree 20 to 40 feet high; young branches thicker than a crow-quill, pale, terete (the very youngest 4-angled), brownish-white. *Leaves* coriaceous, elliptic-oblong or oblong-lanceolate, occasionally obovate-elliptic, shortly and rather bluntly cuspidate, or cordate-acuminate, the base cuneate; upper surface (when dry) dark olivaceous-brown, shining, the main and secondary nerves and also the midrib depressed, the latter prominent, the former faint; lower surface paler and duller than the upper and the nerves and reticulations rather more prominent, the midrib bold and convex, the former faint; lower surface paler and duller than the upper; length 2.5 to 4 in.; breadth 1 to 1.75 in.; petiole .25 to .35 in. *Panicles* axillary and terminal, shorter or longer than the leaves, laxly branched, corymbose or pyramidal, many-flowered, the branches spreading, slender, acutely 4-angled, bracteoles at the bases of the branches and at the bases of the flowers minute, subulate, deciduous. *Flowers* white, .4 in. long (including the calyx), clavate in bud, sessile in groups of two, three or more at the ends of the branchlets; *calyx* slightly over .2 in. in length, funnel-shaped, vertically striate, the mouth with 4 broad, shallow, rounded teeth. *Petals* reniform-orbicular or orbicular, dotted outside, free. *Fruit* depressed-globular, crowned by the narrow tubular remains of the calyx, not pulpy, .75 in. in diam. when ripe. *E. tumida*, Duthie l.c. 487. *Syzygium pyrifolium*, Wall. Cat. 3584; DC. Prodr. III, 261 (Syzyg.); Korth. in Ned. Kruidk. I, 204; Miq. Fl. Ind. Bat. I, Pt. 1, 457. *Calyptranthes pyrifolia*, Blume Bijdr. 1090.

In all the provinces except the Andaman and Nicobar Islands: common.

37. *EUGENIA LINEATA*, Duthie in Hook. fil. Fl. Br. Ind. II, 487. A tree 30 to 60 feet high; young branches thicker than a crow-quill, terete, their bark pale-brown. *Leaves* thinly coriaceous, ovate-lanceolate or narrowly elliptic, rather abruptly and shortly acuminate, the base cuneate; upper surface (when dry) olivaceous-brown, shining, sometimes minutely pitted; the nerves numerous, indistinct, the midrib depressed; lower pale-brown, not olivaceous, the main-nerves more distinct than on the upper, close together, the neighbouring ones

connected throughout their whole length by curving loops; length 2·75 to ·4 in.; breadth 1·1 to 1·75 in.; petioles ·25 to ·35 in. *Panicles* terminal and from the upper leaf-axils, shortly pedunculate, lax, longer than the leaves; branches numerous divaricate, 4-angled, the younger also compressed. *Flowers* ·4 or ·5 in. long (including the stamens), sessile in twos or threes at the apices of the branchlets, the buds clavate. *Calyx* narrowly funnel-shaped, gradually tapering to the base, striate; the mouth with 4 rather deep, broad, rounded, concave lobes. *Petals* 4, orbicular, reflexed. *Fruit* ovoid, crowned by the thick, short, wide, 4-toothed calyx, black and shining when ripe, one-seeded, not pulpy, ·3 in. long and ·2 in. in diam. *E. corymbosa*, Wall. Cat. 3566 F. *Jambosa lineata*, DC. Prodr. III, 287; Miq. Fl. Ind. Bat. I, Pt. 1, 428. *Clavimyrthus lineatus*, Blume Mus. Bot. I, 116. *Myrtus lineata*, Blume Bijdr. 1087.

In all the provinces except the Nicobar and Andaman Islands: common. **DISTRIB.**—The Malayan Archipelago.

A widely distributed species and varying as to size of leaf and also of flower-bud. In some specimens some of the nerves are of a dark colour on the lower surface. This is often confused with *E. rubricunlis*, Miq., which is itself a somewhat doubtful species.

38. **EUGENIA CYMOsa**, Lamk. Dict. III, 109 (*not of Roxb.*). A shrub or small tree; young branches as thick as a crow-quill, terete, pale. *Leaves* thinly coriaceous, ovate, ovate-lanceolate, (narrowly oblong-lanceolate in **VAR. concinna**), caudate-acuminate, the base cuneate; both surfaces when dry brown, the upper tinged with olivaceous, the numerous nerves and reticulations distinct on the lower less so on the upper; length 2 to 3 in.; breadth 1 to 1·5 in.; petiole ·15 to ·3 in. *Panicles* numerous, axillary and terminal, an inch or two in length, the terminal twice as long, lax, the branches few, spreading, slender, compressed, with 3 or 4 flowers at their apices. *Flowers* sessile, white, ·35 in. long (including the stamens). *Calyx* campanulate, abruptly contracted into a pseudo-stalk, the mouth with 4 small triangular lobes. *Petals* 4, orbicular, free. *Fruit* almost globular, the size of a pea, blueish-black, pulpy, 1- or 2-seeded, (if 2-seeded transversely oblong in shape). **Wight** III. II, 17; **Ic. t.** 555; **Kurz** in Journ. As. Soc. Beng. XLVI, Pt. 2, 67; **For.** Fl. I, 486. **Duthie** in Hook. fil. Fl. Br. Ind. II, 482. *Syz. caudatum*, Wall. Cat. 3591. *S. vimineum*, Wall. Cat. 3533?. *S. concinnum*, Wall. Cat. 3582. *S. nelitricarpum*, T. & B. in Nat. Tidsch. Ned. Ind. XXV. *S. cymosum*, DC. Prodr. III, 259; **Korth.** in Ned. Kruidk. Arch. I, 202?. *E. nigrescens*, Poir. Suppl. III, 123?. *E. rhodomelea*, **Commers.** in DC. Prodr. l.c. *Jambosa tenuicuspis*, Miq. Fl. Ind. Bat. I, 431. *Myrtus cymosa*, **Spreng.**; **Blume** Bijdr. 1086.

In all the provinces. **DISTRIB.**—Burma, Sylhet and Assam, Java.

VAR. *concinna* (sp. Wall.); leaves narrowly oblong-lanceolate, caudate-acuminate.

PERAK: *King's Collector* 10521. DISTRIB.—Burma, *Wallich* 3582.

39. *EUGENIA CONGLOMERATA*, Duthie in Hook. fil. Fl. Br. Ind. II, 497. A large tree; young branches thinner than a goose-quill, obscurely 4-angled, blackish-brown, smooth: the older terete, grey, striate. *Leaves* coriaceous, oblanceolate, sub-acute or blunt, much tapered to the base: upper surface (when dry) blackish-brown, shining; the lower liver-coloured, somewhat dull, minutely black-dotted; main-nerves 18 to 20 pairs, spreading, curved, faint, more distinct on the upper than on the under surface, the midrib stout on the lower surface, the edges slightly recurved; length 3 to 4·5 in.; breadth ·8 to 1·75 in.; petiole ·2 to ·35 in. *Inflorescences* generally 2 or 3 together from small tubercles on the naked branches below the leaves, consisting usually of few-flowered capitula on short peduncles from ·25 to ·5 in. long, or of solitary flowers from the bases of the peduncles. *Flowers* small, sub-globular or campanulate, only about ·1 or ·15 in. long, sessile. *Calyx* widely campanulate; the limb with 4 rounded lobes. *Petals* 4, free. *Fruit* pisiform, smooth, crowned by the 4 calyx-lobes and also by the stamens, red, smooth.

MALACCA: *Maingay* (K.D.) 745. SINGAPORE: (near the Botanic Garden), *Ridley* 5073.

40. *EUGENIA URCEOLATA*, King. A tree, 30 to 60 feet high: young branches rather thinner than a goose-quill, 4-angled, with pale brownish-yellow, striate bark. *Leaves* coriaceous, elliptic-oblong, elliptic, or obovate-elliptic, shortly and bluntly acuminate, the base cuneate; upper surface (when dry) dark-brown, shining, pellucid-dotted; the lower warm-brown, with black dots: main-nerves 12 to 18 pairs, curving upwards and interarching ·1 in. or more from the edge; length 5 to 7 in.; breadth 2 to 3·25 in.; petioles ·25 in. long. *Flowers* from small axillary tubercles, solitary, fasciculate or in small panicles, (often several from one axil), much shorter than the leaves and with a few (usually about 3) very short, slender, spreading, 4-angled branches powdered with ferruginous scurf. *Flowers* about ·35 in. across (including the stamens). *Calyx* an open, rotate cup on a short, thin stalk, the margin divided into 4 broad, sub-orbicular, blunt, spreading, concave lobes. *Petals* 4, orbicular, free, spreading. *Fruit* turbinate, about ·5 in. in diam., crowned by the short calyx-limb. *Jambosa urceolata*, Korth. in Ned. Kruidk. Arch. I, (1847), 202; Miq. Fl. Ind. Bat. I, Pt. 1, 418 (excluding all the synonyms).

PERAK: *Wray* 2423, 2609, 2928, 3134, 3248; *King's Collector* 1908, 2317, 713, 3345, 4262, 6665, 6682, 6600, 10677, 10780. SELANGOR:

Ridley 7336. SINGAPORE: Ridley 256, 4975. MALACCA: Ridley. DISTRIB.—Sumatra.

The rotate 4-lobed calyx distinguishes this species.

41. *EUGENIA GLAUCA*, King n. sp. A tree, 40 to 50 feet high; young branches somewhat thicker than a crow-quill, terete; the bark pale-brown and flaky. *Leaves* coriaceous, oblong- or ovate-lanceolate, often obovate-lanceolate, sub-acute or blunt and with a short blunt point; upper surface (when dry) olivaceous-brown and shining, the lower glaucous (not glaucous in VAR.); the numerous nerves and reticulations very distinct on both surfaces, edge slightly recurved, (not recurved in VAR.) the intramarginal nerve very close to it; length 2.25 to 4 in.; breadth 1 to 2 in.; petiole .25 to .3 in. *Flowers* few, sessile, .3 in. long (including the stamens) and as much wide, in racemes or small, few-branched, axillary or terminal panicles 3 or 4 inches long (often several together), with compressed, 4-angled rachises. *Calyx-limb*, a wide shallow cup with 4 broad, shallow, deciduous lobes, afterwards truncate-erose, below narrowed into a thin pseudo-stalk. *Petals* 4, orbicular, clawed, free, reflexed. *Fruit* unknown.

PENANG: Curtis 1152, 2228. PERAK: Ridley 3086. MALACCA: Derry 1184.

Distinguished by its much reticulate leaves glaucous beneath and its few-flowered inflorescence.

VAR. *pseudo-glauca*, King; like the type but with thinner narrower and more acute leaves with no tendency to be obovate, not glaucous beneath and the edges not recurved.

PERAK: Ridley 3108, 8386. The Dindings; Curtis 3440.

42. *EUGENIA SUBRUF A*, King n. sp. A tree, 20 to 30 feet high: young branches half as thick as a goose-quill, terete, grey or pale-brown after the defoliation of the thin, flaky, brown bark. *Leaves* thickly coriaceous, narrowly elliptic or elliptic-ovate, shortly acuminate, the base cuneate; upper surface (when dry) pale olivaceous-brown slightly shining, the midrib, nerves and reticulations depressed; lower reddish, dull, the midrib and nerves prominent: main-nerves about 8 pairs, curving upwards, interarching at less than .1 in. from the edge to form a somewhat faint intramarginal line, the edges recurved; length 3.5 to 5 in.; breadth 1.5 to 2 in.; petiole .3 to .4 in. *Panicles* terminal and axillary, pedunculate, the few branches very short and crowded at the apex of the peduncle; both peduncle and branches 4-angled. *Flowers* .5 in. long (including the stamens), sessile, in threes at the apices of the very short (.1 in. long) branches, clavate-obovoid in bud. *Calyx* campanulate, funnel-shaped, reduced for a third of its length to a

stout, wrinkled pseudo-stalk: the mouth undulate and with 4 broad shallow deciduous teeth. *Fruit* ovoid, smooth, crowned by the wide circular remains of the calyx, .4 in. long (unripe) and .35 in. in diam.

SINGAPORE: *Ridley* 4588. PENANG: *Curtis* 194.

VAR. *robusta*, King; *leaves* larger (3.5 to 5.5 long and 1.5 to 2.2 in. broad) than in the typical form, and young branches thicker. *Panicles* several, terminal, 2 to 2.5 in. long; the branches more numerous than in the type form and not crowded at the apex, the lower as much as .4 in. long.

PENANG: *Curtis* 194, 1448, 3275.

A very rare but distinct species readily recognised by its short panicles, comparatively large flowers, and by the boldness of the midrib and of the few nerves on the under surface of the leaves which when dry are of a conspicuous terra-cotta colour.

43. *EUGENIA DUTHIEANA*, King n. sp. A tree, 40 to 70 feet high; young branches thicker than a crow-quill, the bark brown, rather rough. *Leaves* coriaceous, elliptic, ovate-elliptic or lanceolate-elliptic, shortly acuminate, the base cuneate; both surfaces brown when dry and rather dull, the lower slightly the paler; main-nerves 4 to 8 pairs, curved, ascending, interarching far from the edge (about .15 in.), impressed on the upper, faintly prominent on the lower surface; the secondary nerves almost as prominent as the main ones; the reticulations indistinct on the lower, invisible on the upper surface; length 3 to 5 in.; breadth 1.25 to 2.25 in.; petiole .15 to .2 in. *Racemes* slender, 1 to 2 inches long, slender, solitary, clustered, terminal or axillary, the rachis dark, 4-angled. *Flowers* few, sessile, clavate in bud, sometimes clustered at the apex of the rachis. *Calyx* .2 in. long, funnel-shaped, half of it contracted into a pseudo-stalk, the mouth wide and with 4 broad, rounded teeth. *Petals* reflexed, orbicular, white. *Fruit* clavate when young, becoming almost globular when ripe, rugulose, crowned by the wide circular remains of the calyx, .75 in. long and .65 in. in diam.

PERAK: *King's Collector* 3966, 4218, 6268; *Scortechini*. MALACCA: *Derry* 256. PENANG: *Curtis* 653. SINGAPORE: *Ridley* 3864, 4982, 8400.

A species resembling *E. minutiflora*, Miq., but with larger flowers and more numerous nerved leaves. It is named after Mr. J. F. Duthie, F.L.S., who elaborated the *Myrtaceæ* for Hooker's *Flora of British India*.

44. *EUGENIA POLYANTHA*, Wight Ill. 17; *Icones* 543. A tall, slender tree; young branches rather thicker than a crow-quill, brown. *Leaves* thinly coriaceous, narrowly elliptic or lanceolate, sometimes oblong-ob lanceolate, shortly and bluntly acuminate, the base cuneate: upper surface (when dry) dark-brown, shining, the nerves scarcely visible; lower paler brown, dull, with numerous minute black dots; main-nerves

8 to 10 pairs, spreading, slightly curved upwards at the ends and interarching less than  $\cdot 1$  in. from the edge, slightly prominent on the lower surface: length 3 to 4.5 in.; breadth 1 to 1.5 in.; petiole  $\cdot 2$  to  $\cdot 3$  in. *Panicles* numerous, from the young branches below the leaves, or rarely axillary, 1 to 1.5 in. long; the rachis and short divaricate branches slender, compressed, 4-angled. *Flowers* at the ends of the branchlets, usually in threes, white, sessile. *Petals* 4, orbicular, free. *Calyx* a little more than  $\cdot 1$  in. long, campanulate, constricted for one-third of its length into a pseudo-stalk, rugulose, shining: the mouth with 4 deep, rounded lobes. *Fruit* much depressed-globular if one-seeded, broader than long if two-seeded, always much depressed and crowned by the circular remains of the calyx, black, hard, without pulp,  $\cdot 15$  in. long and of the same width if globular, and more than twice as broad if 2-seeded. Duthie in Hook. fil. Fl. Br. Ind. II, 496. *E. nitida*, Duthie l.c. *E. lucidula*, Miq. Fl. Ind. Bat. I, Pt. 1, 444. ? *Myrtus cymosa*, Bl. Bijdr. 1086.

In all the provinces, except the Nicobars and Andamans: common.

DISTRIB.—Malay Archipelago, Burma.

45. *EUGENIA MANII*, King n. sp. A tree, 20 to 30 feet high: young branches about as thick as a crow-quill, pale-brown, terete. *Leaves* membranous, elliptic to ovate-elliptic, the apex acuminate, the base cuneate; both surfaces brown when dry, the lower much paler than the upper and with numerous small black dots; main-nerves 5 or 6 pairs, curved, ascending, interarching  $\cdot 1$  to  $\cdot 15$  in. from the edge; reticulations large, indistinct on the lower and invisible on the upper surface; length 3.5 to 4.5 in.; breadth 1.5 to 2 in.; petiole  $\cdot 2$  to  $\cdot 4$  in. *Panicles* mostly shorter than the leaves, crowded, from the axils of leaves and of fallen leaves, usually shorter than the leaves, the branches few and slender (one often from the very base), compressed. *Flowers* clustered at the apices of the filiform branchlets, often numerous and crowded, sometimes few, whitish-red in colour, globular in bud. *Calyx*  $\cdot 15$  in. long, campanulate, abruptly contracted into a short pseudo-stalk; the mouth with 4 deep, ovate-rotund lobes. *Petals* 4, rotund, slightly longer than the calyx-lobes, free, not calyptrate. *Fruit* depressed-globular, minutely rugulose, crowned by the small circular remains of the calyx, 4 in. broad and slightly less from base to apex.

ANDAMAN ISLANDS: *King's Collectors*.

Named in honour of Mr. E. H. Man, C.I.E., Deputy Commissioner of the Andamans, who has for years given most cordial help in the botanical exploration of the Andaman and Nicobar groups. A species related to *E. polyantha*, Wight, but with larger fewer-nerved leaves, and rather longer flowers and fruit. Also near *E. operculata*, Roxb.

46. *EUGENIA CAUDATA*, King. A glabrous bush or small tree; young branches very slender, sub-terete, the bark pale-grey or brown. *Leaves* thinly coriaceous, lanceolate or ovate-lanceolate, caudate-acuminate, the base cuneate; both surfaces pale-brown when dry, the lower palest; nerves numerous, spreading, scarcely visible; length 1·75 to ·3 in.; breadth ·75 to 1·1 in.; petiole ·15 to ·3 in. *Racemes* on slender peduncles, axillary or terminal, shorter than the leaves, laxly 3- to 5-flowered. *Flowers* ·25 in. across, on slender pedicels ·1 to ·2 in. long, (longer in fruit). *Calyx* ·2 in. long, campanulate, contracted at the very base into a very short pseudo-stalk (less than a quarter of its length), the mouth with 4 short, broad, blunt, deciduous teeth. *Petals* orbicular, about twice as long as the short stamens, deciduous. *Fruit* at first ovoid, afterwards nearly globular, ·5 in. long, smooth, crowned by the cupular, short, 4-toothed calyx-limb. *Myrtus caudata*, Wall. Cat. 3631.

SINGAPORE: *Wallich*. PENANG: *Curtis* 654. PERAK: *Curtis* 2007; *Scortechini* 392, 444; *King's Collector* 3654, 4241, 6262; *Wray* 472, 1176, 1574, 2824, 3208, 5341.

A species rather easily recognised by its small caudate-acuminate, lanceolate, indistinctly-nerved leaves and few-flowered, lax racemes. *Wallich* also issued under his No. 3591 a plant to which he gave the name *Syzygium caudatum*. It differs much from this and is in fact *Eugenia cymosa*, Lamk.

47. *EUGENIA FILIFORMIS*, Wall. Cat. 3578. A glabrous tree, 30 to 50 feet high, with slender drooping branches: young branches very slender, terete, dark-coloured. *Leaves* coriaceous, small, pellucid-dotted, lanceolate or ovate-lanceolate, shortly caudate-acuminate, the base cuneate: both surfaces greenish-brown when dry: the nerves numerous, a few slightly conspicuous, the others very faint; length 1·75 to 3 in.; breadth ·75 to 1·2 in.; petiole ·15 to ·2 in. slender. *Racemes* slender, very lax, few-flowered, axillary and terminal, as long as or longer than the leaves. *Flowers* ·75 in. long including the stamens, inserted on the slender rachis by filiform pedicels ·75 to 1·25 in. in length. *Calyx* funnel-shaped, attenuated for half its length into a slender pseudo-stalk; the limb with 4 broad, blunt, reflexed lobes nearly ·1 in. long. *Petals* orbicular-reniform, reflexed, ·25 in. long. *Ripe fruit* elliptic-ovoid to sub-globular, smooth, ·75 in. long, crowned by the calyx-lobes. *Duthie* in Hook. fil. Fl. Br. Ind. II. 478. *Syzygium filiforme* and *S. capillare*, Wall. Cat. 3580 and 3578. *Clavimyrtilus virens*, Blume Mus. Bot. Lugd. Bat. I, 114.

SINGAPORE: *Wallich*; *Hullett*; *Ridley* 4569. PENANG: *Wallich*; *Curtis* 1090, 1443. MALACCA: *Griffith* (K.D.) 2389; *Maingay* (K.D.) 721; *Derry* 451, 471. PERAK: *King's Collector* 2321, 5601, 5861, 5925, 6708; *Wray* 1192, 3262; *Ridley* 9640.



48. *EUGENIA ANDAMANICA*, King n. sp. A small glabrous tree: young branches slender, with greyish-brown rather rough bark. *Leaves* coriaceous, rotund-ovate to rotund, with a very short abrupt blunt apiculus, obscurely crenate near the apex, abruptly tapered to the base; nerves numerous invisible on the upper shining surface and faint on the dull lower surface, curving upward, interarching close to the margin; length 1·5 to 2·5 in.; breadth 1 to 2 in.; petiole ·3 or ·4 in. *Panicles* often as long as the leaves, crowded, pedunculate, axillary and terminal, the branchlets usually trichotomous, 4-angled, bearing 3 or 4 sessile flowers at their apices. *Flowers* about ·5 in. long, clavate, the calyx contracted into a pseudo-stalk more than half of its length, the mouth with 4 erect, equal, triangular, acute teeth. *Petals* 4, orbicular, calyptrate. *Fruit* unknown.

ANDAMAN ISLANDS: *King's Collector*.

49. *EUGENIA HOSEANA*, King n. sp. A glabrous tree, 30 to 40 feet high: young branches thinner than a goose-quill, pale greyish-yellow, terete, the very youngest quadrangular. *Leaves* coriaceous, elliptic to elliptic-oblong, abruptly and shortly caudate-acuminate, the base cuneate; upper surface dark-brown leaden and shining when dry, the lower pale-brown and dull; main-nerves 15 to 20 pairs ascending very little, almost straight, interarching ·1 in. from the edge; length 4·5 to 7 in.; breadth 1·75 to 2·5 in.; petiole ·15 to ·3 in. *Racemes* axillary and terminal, solitary, not more than 1 in. long, the rachis with 2 deep grooves. *Flowers* white, ·35 in. long, exclusive of the stamens, sessile, enveloped in several sub-ovate leathery bracts as long as themselves. *Calyx-tube* widely campanulate, contracted slightly at the base but not into a pseudo-stalk; its texture very leathery; its mouth with 4 blunt, obtuse lobes. *Petals* orbicular. *Fruit* unknown.

PERAK: *Scortechini* 163; *Wray* 2952; *King's Collector* 3407.

50. *EUGENIA BENJAMINA*, King n. sp. A glabrous shrub or small tree: young branches thin, terete, pale-brown. *Leaves* thinly coriaceous, conspicuously pellucid-dotted on both surfaces, narrowly elliptic, sometimes oblanceolate-elliptic, with an abrupt, narrow, short apiculus half an inch or more in length, the base cuneate: both surfaces pale yellowish or greenish-brown when dry; the nerves very numerous, distinct like the reticulations, interarching near the margin; length 2·5 to 3 in.; breadth 1 to 1·5 in.; petiole ·15 in. slender. *Racemes* axillary or terminal, shorter than the leaves, few-flowered. *Flowers* ·5 to ·6 in. long, (including the stamens), sessile on short stout pedicels. *Calyx* clavate, the mouth with 4 broad, blunt lobes. *Petals* orbicular, with thin edges. *Fruit* when young covered with large convex pellucid glands, crowned by the deeply 4-lobed calyx-limb; when ripe depressed-globular, the calyx-limb reduced to a ring, 1 in. long and 1 to 1·4 in. broad.

PERAK : Wray 2623, 2797, 3204 ; King's Collector 7306. DISTRIB.—Sumatra, Forbes 2046.

Named from the resemblance of its leaves to those of *Ficus Benjamina*, Linn. The Perak specimens have no ripe fruit on them and the description of it above given is taken from Forbes's Sumatra specimens which agree in leaf absolutely with those collected in Perak.

51. *EUGENIA VARIOLOSA*, King n. sp. A glabrous shrub, 12 to 20 feet high : young branches slender, 4-angled, pale-brown, profusely dotted, like the leaves on both surfaces and the flowers, with large pellucid glands. *Leaves* thinly coriaceous, oblong-lanceolate, rarely elliptic-oblong, caudate-acuminate, the base cuneate ; both surfaces when dry pale-brown ; main-nerves 12 to 15 pairs slightly prominent on the lower surface (when dry), ascending, rather straight, interarching  $\cdot 1$  to  $\cdot 15$  in. from the margin, secondary nerves and reticulations indistinct : length 5.5 to 7 in. ; breadth 1.35 to 2.5 in. ; petiole  $\cdot 2$  to  $\cdot 3$  in. *Racemes* axillary and terminal, crowded, only about 1 in. long. *Flowers* white,  $\cdot 4$  in. across, on stout pedicels less than  $\cdot 1$  in. long. *Calyx-tube* narrowly campanulate,  $\cdot 2$  in. long, the mouth with two very unequal pairs of rounded teeth. *Petals* orbicular, thick in the centre, much shorter than the stamens. *Style* about  $\cdot 5$  in. long. *Fruit* globular : smooth, prominently glandular-dotted, crowned by the short calyx,  $\cdot 8$  in. in diam.

PERAK : Scortechini ; King's Collector 3415, 3995, 6036, 10437. SINGAPORE : Ridley 8411, 8449. SELANGOR : Ridley 4973.

Distinguished by having prominent pustule-like glands on all its parts.

52. *EUGENIA CLAVIFLORA*, Roxb. Hort. Beng. 37 ; Fl. Br. Ind. II, 488. A glabrous tree, 25 to 30 feet high : young branches slender, pale-brown, compressed. *Leaves* thinly coriaceous, lanceolate or oblong-lanceolate, shortly acuminate, the base acute ; main and secondary nerves very numerous, curving upwards and interarching less than  $\cdot 1$  in. from the edge : length 4 to 6 in. ; breadth 1.5 to 2 in. ; petiole  $\cdot 1$  to  $\cdot 15$  in. *Flowers*  $\cdot 6$  to  $\cdot 8$  in. long, in very shortly stalked, condensed, axillary corymbs, sessile ; the calyx-tube narrowly cylindric-clavate, contracted at the base into a slender pseudo-stalk ; the mouth with 4 or 5 short, broad lobes. *Petals* 4 or 5, free, white, orbicular-ovate, about  $\cdot 25$  in. long ; filaments about  $\cdot 6$  in. long. *Fruit* narrowly oblong-ovoid, about  $\cdot 8$  in. long, smooth, pulpy, crowned by the short, incurved calyx-limb, 1-seeded. Duthie in Hook. fil. Fl. Br. Ind. II, 484 ; Wight Ill., II, 15 ; Ic. t. 606 ; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2. 65 ; For. Fl. I, 480. *Syzygium claviflorum*, Wall. Cat. 3575. *S. longiflorum*, Wall. Cat. 3572. *S. excavatum*, Wall. Cat. 3574. Wall. Cat. Indeterminata 8085.

NICOBAR and ANDAMAN ISLANDS; common. DISTRIB.—British India in Burma, Chittagong and Assam.

VAR. *leptantha*; flowers and fruit smaller than in the typical form: flowers in short racemes, not in corymbs: fruit  $\frac{1}{4}$  in. long. Duthie in Hook. fil. Fl. Br. Ind. II, 484; Benth. Fl. Austral. III, 283 (*Syz.*); Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 65; For. Fl. I, 480. *S. suavissimum*, Wall. Cat. 3573. *Syzyg.* Griff. Notul. 654.

MALACCA: *Griffith* (K.D.) 2366/1, 2367. PENANG: *Ridley* 1021, 1109.

VAR. *excavata*; leaves more coriaceous than in the typical form and somewhat larger, young branches with rather rough bark. *Syzygium excavatum*, Wall. Cat. 3574.

PENANG: *Curtis* 697, 749, 8384, 8393. PROV. WELLESLEY: *Ridley* 6970. PERAK: *King's Collector* 7440. JOHORE: *Ridley* 4076.

VAR. *Maingayi*; young branches rather stout, the very youngest smooth, the older with deeply striate bark. *Leaves* thickly coriaceous, oblong-lanceolate, shortly acuminate, main-nerves not prominent, the midrib very prominent on the lower surface: length  $4\frac{1}{2}$  to  $7\frac{1}{2}$  in. *Flowers* about  $\frac{1}{2}$  in. long: *fruit* unknown. *E. Maingayi*, Duthie in Hook. fil. Fl. Br. Ind. II, 484.

MALACCA: *Maingayi* (K.D.) 750.

This is known only from Maingay's imperfect specimens. It does not appear to me to be separable specifically from *E. claviflora*, Roxb.

VAR. *glandulosa*; young branches acutely 4-angled: leaves as in VAR. *Maingayi*: calyx-tube with large pellucid glands.

MALACCA: Mount Ophir; only once collected.

53. EUGENIA ZEYLANICA, Wight Ill. II, 15: Ic. I, 73. A glabrous tree, 30 to 60 feet high: young branches slender, obsolete 4-angled or terete, pale-brown. *Leaves* coriaceous, lanceolate, sometimes ovate-lanceolate, obtusely acuminate, the base acute: both surfaces shining, brown when dry, the lower minutely glandular and paler: nerves 10 or 12 pairs, indistinct, interarching near the edge, the reticulations obsolete; length  $1\frac{1}{2}$  to  $3\frac{1}{2}$  in.; breadth  $\frac{3}{5}$  to  $1\frac{1}{2}$  in.; petiole  $\frac{1}{5}$  to  $\frac{1}{4}$  in. *Panicles* axillary and terminal, crowded, the axillary shorter than the leaves, the terminal longer; branchlets short, 4-angled like the main-rachis. *Flowers* numerous, in twos or threes at the apices of the ultimate branchlets, their length (including the stamens)  $\frac{3}{5}$  to  $\frac{1}{2}$  in. *Calyx* funnel-shaped,  $\frac{1}{2}$  in. long, sessile or on a short pedicel; the tube ribbed, granular-tubercled; the limb with 4 or 5 ovate-rotund, concave, erect; deciduous lobes. *Petals* orbicular, 4 or 5, deciduous as a calyptra. *Fruit* pisiform, smooth, white. Duthie in Hook. fil. Fl. Br. Ind. II, 485. Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 65; For. Fl. I, 481. *E. spicata*, Lam. Dict. III, 201; DC. l.c. (*Syz.*). Trimen Fl. Ceylon I, 171.

Bedd. Fl. Sylv. I, t. 202. *E. glandulifera*, Roxb. Hort. Beng. 37; Fl. Ind. II, 496. *S. zeylanicum*, DC. Prodr. III, 260; Wall. Cat. 3564, in part; *Z. corticata*, Wall. Cat. 3565; Dalz. and Gibs. Bomb. Fl. 94. *Acmena zeylanica*, Thwaites Enum. 118. *A. parviflora*, DC. l.c. 262. *Jambosa bracteata*, Miq. Fl. Ind. Bat. I, Pt. 1, 437. *S. corticatum*, Wall. Cat. 3565. *Myrtus zeylanica*, Linn. Sp. Pl. 675.—Rheede Hort. Mal. v. t. 20.

In all the provinces; common. **DISTRIB.**—British India, Ceylon.

54. **EUGENIA GRATA**, Wight Ill. II, 15. A small glabrous tree: young branches sub-terete, the bark pale-brown, loose. *Leaves* coriaceous, ovate-lanceolate to lanceolate, acuminate, the base acute; upper surface brown when dry, the lower pale, main-nerves numerous, curving, ascending, interarching about  $\cdot 1$  in. from the edge, distinct as is the midrib on the lower surface in the young leaves, indistinct on the upper: length 2 to 3·5 in.; breadth  $\cdot 85$  to 1·5 in.; petiole  $\cdot 15$  to  $\cdot 25$  in. *Inflorescence* and *flowers* as in *E. zeylanica* but the calyx-tube not granular. *Fruit* ovoid, pellucid-dotted, crowned by the small calyx-lobes,  $\cdot 2$  in. long, black when ripe. Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, p. 65; For. Flora Burma I, 480; Duthie in Hook. fil. Fl. Br. Ind. 486. *Syzyg. gratum*, Wall. Cat. 3586. *S. scabridum*, Wall. Cat. 3564 D. *Myrtus quadrangularis*, Ham.

MALACCA: Griffith (K.D.) 2364. PENANG: Curtis 317, 756, 2245; Wallich. PERAK: Ridley 7955, 9456; King's Collector 5414, 5433, 6267. ANDAMAN ISLANDS: King's Collector. **DISTRIB.**—Sumatra.

A species very close to *E. zeylanica* but with somewhat larger leaves, glaucous or sub-glaucous beneath. The best distinguishing marks lie however in the calyx-tube which in this is smooth, and in the fruit which in this is ovoid and black.

55. **EUGENIA TECTA**, King n. sp. A glabrous tree, 20 to 25 feet high: young branches slender, 4-angled; the bark dark-brown, flakey. *Leaves* thinly coriaceous, almost sessile, ovate-lanceolate, shortly and obtusely acuminate, the base rounded and minutely cordate; both surfaces pale-brown when dry; nerves numerous but scarcely visible, the midrib prominent on the lower surface and bearing small scattered tubercles; length 2·5 to 3·25 in.; breadth 1·1 to 1·6 in.; petiole  $\cdot 05$  to  $\cdot 1$  in., densely covered with black tubercles. *Flowers*  $\cdot 5$  or  $\cdot 6$  in. long (including the stamens), crowded in axillary or terminal fascicles, sessile. *Calyx* widely funnel-shaped, tapered to the bracteolate base, minutely dotted; the limb wide, with 5 broad lobes. *Petals* orbicular, yellowish, deciduous. *Fruit* unknown.

PERAK: King's Collector 1863.

56. **EUGENIA PSEUDO-TETRAPTERA**, King n. sp. A tree? Young branches of the thickness of a crow-quill, compressed at the nodes,

4-angled and 4-winged, the bark dark-brown and flakey, deciduous. *Leaves* thinly coriaceous, almost sessile, broadly lanceolate or ovate-lanceolate, the base broad and minutely cordate, the apex shortly and bluntly acuminate; upper surface dull olivaceous-brown with remote black pits, the nerves slightly and the midrib greatly depressed; lower surface pale-brown, with many small black marks especially on the bold thick midrib; main-nerves 14 to 18 pairs, prominent, slightly curved, subascending and interarching at about  $\cdot 1$  in. from the edge; length 2 to  $2\cdot 25$  in.; breadth 1 to  $1\cdot 5$  in.; petiole  $\cdot 05$  in. wrinkled. *Flowers* in terminal, sessile, multi-bracteate glomeruli about  $\cdot 4$  in. long; the bracts about as long as the flowers, large, broadly oblong, blunt, their posterior surfaces bearing many black dots. *Flowers* about  $\cdot 25$  in. long, their pedicels less than  $\cdot 1$  in. *Calyx* cylindric, slightly contracted at the base; the mouth with 5 erect, ovate, blunt, sub-distant teeth, about  $\cdot 05$  in. long. *Petals* sub-orbicular, calyprate. *Fruit* sub-globular,  $\cdot 25$  in. in diam., crowned by the calyx-teeth.

JOHORE: on Gunong Panti, Ridley 4197.

This species comes very near *E. tetraptera*, Miq., but that species has narrower, less conspicuously bracteate flowers and its young branches are covered with glandular hairs. This is also allied to *E. tecta*, King, which has, however, larger flowers in pedunculate bracteate heads. The leaves of the two are almost exactly alike in texture and form, but the dots and pits in those of *E. tecta* are less conspicuous than in these of this plant. This is also closely allied to *E. polita*.

57. *EUGENIA POLITA*, King. A glabrous tree, 30 to 60 feet high; young branches slender, compressed and acutely 4-angled or winged, their bark pale-brown and deciduous. *Leaves* coriaceous, lanceolate or ovate-lanceolate, bluntly and shortly acuminate, the base abruptly cuneate, both surfaces shining and of a liver-brown colour; main-nerves 10 to 12 pairs, often forked, interarching less than  $\cdot 04$  in. from the edge, hardly visible on the upper surface, length  $1\cdot 5$  to  $2\cdot 25$  in.; breadth  $\cdot 75$  to 1 in.; petiole under  $\cdot 1$  in. *Panicles* shorter than the leaves, axillary and terminal, very condensed, many-flowered, bearing coriaceous bracts of two sorts, those at the base of the panicle with long, subulate points, those at the base of its branches and of the flowers oblong with broad truncate apices, the rachis and branches 4-winged. *Flowers* (including the stamens)  $\cdot 35$  in. long, sessile. *Calyx* funnel-shaped, ribbed, very coriaceous; the limb much prolonged beyond the ovary, but only slightly expanded, with 5 ovate-rotund, concave, erect lobes. *Petals* orbicular, deciduous. *Stamens* not very numerous nor long. *Fruit* globular, crowned by the 5 calyx-lobes, when young minutely pellucid-glandular. *E. zeylanica*, Duthie (not of Wight) in Hook. fil. Fl. Br. Ind. II, 485, in part. *Syzyg. politum*, Wall. Cat. 3626.

PENANG: Porter; Curtis 511. JOHORE: Ridley 4078. PERAK: Scortechini 585; Wray 2822; King's Collector 6930, 8679. MALACCA: Ridley 859.

A species superficially resembling *E. zeylanica*, Wight, but really differing greatly from that and every other species within our region by its prominently bracteate and very condensed inflorescence which has winged branchlets. The fruit has been only twice collected.

58. *EUGENIA VALDEVENOSA*, Duthie in Hook. fil. Fl. Br. Ind. II, 489. A glabrous tree, 20 to 50 feet high: young branches rather thinner than a goose-quill when dry, acutely 4-angled but not winged, the bark brown. Leaves coriaceous, elliptic, shortly and abruptly acuminate, the base cuneate or rounded; upper surface olivaceous-brown, reticulate, the nerves faint; lower warm-brown, the main-nerves 14 to 24 pairs, very prominent, curving upwards and interarching in a wavy line .15 to .25 in. from the edge; length 5.5 to 8 in.; breadth 2.35 to 3.5 in.; petiole .2 to .25 in. Panicles terminal or from the upper leaf-axils, pedunculate, rather shorter than the leaves, with many spreading, lax branches, the branchlets compressed. Flowers white, sessile, in heads on the ends of the branchlets, .4 in. long (including the stamens), the buds narrowly clavate. Calyx narrowly infundibuliform, tapering equally from base to apex, the mouth truncate, entire. Petals calyptrate. Fruit depressed-globular, crowned by the short remains of the calyx-tube, smooth, .75 in. in diam. *L. ellipticum*, Wall. Cat. 3587 in part, (not of other authors).

PENANG: Wallich; Curtis 55; King's Collector 1579; Maingay 723, 762. PERAK: Scortechini 1662; Wray 2209, 2842; King's Collector 737, 2737, 4947, 5122, 5322, 7003, 10246, 10873.

Under the pre-occupied name *L. ellipticum*, Wallich issued this species as No. 3587 of his Catalogue. Mixed with it, however, he issued some leaves of a distinct species from Penang. Good specimens, with leaves exactly agreeing with these, have since been found and that plant has been named *E. pergamacea*, King.

59. *EUGENIA OBLONGIFOLIA*, Duthie in Hook. fil. Fl. Br. Ind. II, 491. A tree; young branches somewhat thicker than a crow-quill, very pale, 4-angled (sometimes obscurely so). Leaves thinly coriaceous, elliptic or oblong-elliptic, shortly acuminate, the base cuneate; both surfaces shining, the nerves and reticulations distinct; upper surface pale-olivaceous, the lower pale-brown; main-nerves 10 to 16, slender, whitish, not much more prominent than the secondary, interarching less than .1 in. from the edge; length 3 to 4.5 in.; breadth 1.25 to 2 in.; petiole .3 in. long. Panicles terminal, corymbose, spreading, many-flowered, 3 or 4 inches in length and as many in breadth; the short peduncle and numerous branches stout, 4-angled, the branchlets

compressed, all very pale. *Flowers* .3 or .4 in. across. *Petals* 4, calyptrate, green. *Calyx* .2 in. long, campanulate, contracted for half its length into a thin pseudo-stalk, smooth; the mouth truncate or very slightly toothed. *Fruit* (unripe) globular, smooth, crowned by the short, wide remains of the calyx, .35 in. in diam.

MALACCA: *Maingay* (K.D.) 746. SINGAPORE: *Ridley* 360, 4993, 10131. PERAK: *King's Collector* 6012, 8848, 10883.

VAR. *parviflora*; flowers smaller than in the typical form: leaves oblong-lanceolate, tapering to each end, 3.5 to 5.5 in. long and 1 to 1.5 in. broad.

PERAK: *Scortechini* 618.

VAR. *robusta*, King; *calyx* .35 in. long; panicles, branches of panicle and young twigs thicker than in the typical form.

PERAK: *Scortechini* 216.

60. *EUGENIA SUBHORIZONTALIS*, King n. sp. A small tree; young branches thinner than a goose-quill, terete, blackish-brown when dry. *Leaves* thinly coriaceous, oblong or elliptic-oblong, tapering to each end, shortly and sharply acuminate, the base cuneate, the edges somewhat recurved (when dry), the upper surface dark olivaceous-brown and shining, the midrib depressed, all the nerves faint, lower surface dark brown, not olivaceous, duller than the upper, the midrib very bold and convex, the main-nerves 15 to 20 pairs, sub-horizontal, thin, but rather prominent and shining, interarching to form a bold intramarginal line .1 in. from the edge, the secondary nerves and reticulations rather distinct; length 4.5 to 7 in.; breadth 1.5 to 2.3 in.; petiole .5 to .6 in. *Panicles* axillary and terminal, the former shorter than the leaves, the latter often longer, lax: the branches rather sparse, spreading, compressed, obscurely 4-angled. *Flowers* white, sessile, in clusters of 3 to 6 at the ends of the branchlets, globose-clavate in bud. *Calyx* .25 in. long, funnel-shaped, contracted to a pseudo-stalk for half its length: the limb with 4 shallow, broad, rounded (sometimes acute) lobes. *Fruit* unknown.

PERAK: *Wray* 2118, 2097. DISTRIB.—Sumatra, Hort. Bogor. 3350 under the name of *E. punctulata*, Miq., which it is not.

61. *EUGENIA VALETONIANA*, n. sp. King. A tree, 60 to 80 feet high; young branches thicker than a crow-quill, terete, the bark pale-brown, flakey. *Leaves* as in *E. Griffithii* but somewhat narrower and with rather more numerous main-nerves. *Flowers* sessile in small terminal or axillary panicles shorter than the leaves, with very few short, terete, few-flowered cymose branches, or in small pedunculate cymes. *Calyx* .3 in. long, clavate-campanulate, constricted into a short pseudo-stalk; the wide mouth truncate or with 4 deciduous, short, rounded lobes.

*Petals* small, orbicular, deciduous. *Fruit* when unripe pyriform, when ripe globular, crowned by the wide calyx-limb, .5 in. long.

PERAK: *King's Collector* 5982, 6090.

A species near *E. Griffithii*, and also near *E. Clarkeana* and *E. Koordersiana*, but with much smaller panicles and fruit at first pyriform.

62. *EUGENIA EXPANSA*, Duthie in Hook. fil. Fl. Br. Ind. II, 491.

A tree, 20 to 50 feet high; young branches thinner than a goose-quill, terete, pale-brown. *Leaves* coriaceous, oblong-lanceolate or oblong-elliptic, acuminate, the base cuneate, both surfaces brown (when dry) and shining, the lower paler; main-nerves 20 to 24 pairs, faint, spreading, connected by numerous loops, not very prominent in either surface but distinctest on the lower, intramarginal line less than .1 in. from the edges: length 4 to 6.6 in.; breadth 1 to 2.25 in.; petiole .15 to .2 in. *Panicles* numerous, terminal and axillary, usually 2 or 3 together, varying in length from less than one inch to several inches, the longer ones bearing a few slightly compressed branches with 5 to 8 sessile flowers crowded at their apices. *Flowers* (including the stamens) .3 in. long (sometimes longer), clavate in bud. *Calyx* .15 in. long, infundibuliform, minutely rugulose; the mouth truncate, undulate, slightly reflexed. *Petals* orbicular, calyprate. *Fruit* unknown. *Syzygium expansum*, Wall. Cat. 3567. *S. euneuron*, Miq. Fl. Ind. Bat. Suppl. 314.

PENANG: *Wallich* 3567; *Curtis* 247. PERAK: *Wray*, *Scortechini*, *King's Collector*; very common.

63. *EUGENIA CHLOROLEUCA*, King. A small tree or shrub; young

branches almost as thin as a crow-quill, terete below but 4-angled near the apex, yellowish. *Leaves* coriaceous, oblanceolate, shortly and bluntly acuminate, much narrowed at the base; both surfaces pale-olivaceous; the upper tinged with brown, shining, the main-nerves indistinct or invisible; the lower very pale, dull, the 12 to 16 main-nerves spreading, very faint, the edge thickened and slightly recurved; length 3 to 5.5 in.; breadth 1 to 2.25 in.; petiole .3 to .35 in. *Panicles* much shorter than the leaves, mostly terminal, rarely axillary, trichotomous, the branchlets also trichotomous, all acutely 4-angled and striate, the bracteoles at the nodes and at the bases of the flowers short, concave, ovate. *Flowers* bibracteolate at the base, in threes, .4 in. long (including the stamens) on 4-angled pedicels .1 in. long. *Calyx* .15 in. long, minutely rugulose; the mouth with 4 broad, shallow teeth. *Fruit* ellipsoid, rugulose, crowned by the 4 persistent calyx-teeth, length (unripe) .3 in.

PERAK: *King's Collector* 1901, 4951, 7307; *Scortechini* 45; *Wray* 2917.

This closely resembles *Eugenia fastigiata* (*Calyptanthes fastigiata*, Blume), but the leaves have shorter petioles and fewer nerves and the fruit of this is corrugated



ringulose and not glandular. This also resembles *Eugenia sylvestris* (*Caryophyllus sylvestris*, Blume) almost exactly in leaves: but the fruit of the latter is very different.

64. *EUGENIA NIGRICANS*, King n. sp. A large tree; young branches rather thicker than a crow-quill, sub-terete, dark-brown when dry. *Leaves* oblong to oblong-elliptic, shortly and abruptly acuminate, the base more or less cuneate; both surfaces very dark-olivaceous and dull (when dry), the lower with a reddish tinge: nerves very numerous and close together, straight and sub-horizontal, all faint below and distinct above, the reticulations few and faint on both surfaces, the edge recurved, and the intramarginal line very near it; length 2·5 to 4 in.; breadth 1·4 to 2 in.; petiole ·3 to ·4 in. *Panicles* axillary and terminal, not more than half as long as the leaves with few lax trichotomous spreading branchlets, all 4-angled. *Flowers* white, ·3 in. long (including the stamens), in threes, sessile, clavate in bud. *Calyx* ·15 in. long, wrinkled, funnel-shaped, narrowed for half its length into a pseudo-stalk, the mouth wide and truncate. *Petals* deciduous. *Fruit* unknown.

PERAK: *Wray* 2221.

65. *EUGENIA INOPHYLLA*, Roxb. Hort. Beng. 37: Fl. Ind. II, 496. A glabrous tree, 40 to 60 feet high; young branches rather thinner than a goose-quill, terete, dark-brown. *Leaves* coriaceous, narrowly elliptic or elliptic-lanceolate, rather abruptly acuminate, the base cuneate; both surfaces when dry smooth, shining, the numerous thin, curved, ascending main-nerves indistinct; the upper surface almost black, the lower deep-brown; length 3 to 5 in.; breadth 1·25 to 2·25 in.; petiole ·2 to ·4 in. *Panicles* corymbose, in the upper leaf-axils and terminal, nearly as long as or longer than the leaves, on rather long peduncles, many-flowered, each from 2·5 to 3 in. across, the branches and branchlets numerous, 4-angled. *Flowers* 2 or 3 together, sessile at the apices of the branches, ·4 in. long (including the coloured stamens) white, clavate in bud. *Calyx* funnel-shaped, rather abruptly tapered to the base, ·2 in. long, smooth; the mouth truncate, with 5 very obscure, short, broad teeth. *Petals* calyptrate. *Fruit* (according to Roxburgh) pear-shaped, large. Duthie in Hook. fil. Fl. Br. Ind. II, 481 *in part*. Wight Ic. 623 (*bad*). *Jambosa inophylla*, Miq. Fl. Ind. Bat. I, Pt. 1, 433. *Syzygium inophyllum*, Wall. Cat. 3600 *in part*; DC. Prodr. III, 260.

PERAK: *Wray* 1377, 2554, 2655, 2734; *King's Collector* 4741, 6079, 655, 8481. PENANG: *Curtis* 973, 974, 2621.

Two specimens of this are included in the Linnæan Society's set of the Wallichian plants under 3600. The other two sheets belong to two different species.

66. *EUGENIA OBLATA*, Roxb. Hort. Beng. 37; Fl. Ind. II, 493.

A tree, 40 to 50 feet high; young branches terete (when dry), reddish-brown. *Leaves* thinly coriaceous, oblong to elliptic-oblong, or broadly lanceolate, acuminate, the base cuneate; both surfaces brown (when dry), shining, the upper often tinged with olivaceous and the lower with red, main-nerves 20 to 24 pairs, close, connected by numerous secondary nerves and reticulations, indistinct on the upper but distinct on the lower surface, intramarginal nerve very close to the slightly recurved margin; length 3·5 to 5 in.; breadth 1 to 2·5 in.; petiole ·2 to ·25 in. *Panicles* axillary and terminal, shorter than the leaves, often pedunculate, corymbose, the branches and branchlets few, crowded, obtusely 4-angled. *Flowers* ·5 in. long, including the stamens, white, sessile, shortly clavate in bud. *Calyx* ·25 in. long, funnel-shaped, the mouth with 4 deciduous, short, blunt lobes, narrowed to a pseudo-stalk. *Petals* orbicular, calyptrate. *Fruit* as large as a cherry when ripe, smooth, pulpy, the pericarp rather thick; seed solitary. Wight Ill. II, 15; Ic. t. 622; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 67; For. Fl. I, 488; Duthie in Hook. fl. Fl. Br. Ind. II, 492. *S. obovatum*, Wall. Cat. 3569. *S. pulchellum*, Wall. Cat. 3566 *in part.* *Syng. truncatum*, Miq. Fl. Ind. Bat. I, Pt. 1, 455. *Jambosa pulchella*, Miq. Fl. Ind. Bat. I, Pt. 1, 422. *E. comosa*, Wall. Cat. 3566 D; l.c. 3600 C (under *E. inophylla*).

MALACCA: *Derry* 1178. PERAK: *Scortechini*. PROVINCE WELLESLEY: *Curtis* 9378a. PENANG: *Ridley* 9378.

67. EUGENIA BERNARDI, King n. sp. A medium-sized tree; young branches thicker than a crow-quill, slightly compressed, dark-brown, the older terete and grey. *Leaves* thinly coriaceous, broadly elliptic, abruptly and shortly acuminate, the base slightly cuneate; both surfaces brown (when dry) and shining, the lower slightly paler; the numerous close nerves and their connecting reticulations distinct on both; the intramarginal line less than ·1 in. from the edge, the midrib depressed on the upper, prominent on the lower surface; length 3·5 to 4·5 in.; breadth 1·75 to 2·25 in.; petiole ·25 to ·4 in. *Panicles* terminal, occasionally from the branches below the leaves, shorter than the leaves when in flower but longer in fruit, densely corymbose, trichotomously branched, many-flowered, the peduncle and lower branches terete, the branchlets 4-angled. *Flowers* partly sessile and partly on very short thick pedicels, the buds obovoid, obtuse. *Calyx* ·15 in. long, campanulate-cylindric, tapering slightly to the base but not forming a pseudo-stalk, smooth, the limb truncate. *Petals* falling off in a depressed calyptra. *Stamens* ·25 in. long. *Fruit* turbinate, black when ripe, without pulp, crowned by the minute remains of the calyx, ·2 in. in diam.

PERAK: *Scortechini* 326. SELANGOR: *Ridley* 8617. PENANG: *Curtis* 975, 2845.

Remarkable for its short, obovoid flower-buds; closely related to *E. simulans* which has, however longer clavate buds.

68. *EUGENIA PRAINIANA*, King n. sp. A tree 60 to 80 feet high; young branches as thick as a goose-quill, terete, brown. *Leaves* thickly coriaceous, elliptic-oblong, the apex shortly acuminate, the base cuneate; upper surface dark-brown, shining, the midrib pale and depressed, the nerves slightly raised, faint; lower surface yellowish-brown, dull, the 20 to 30 pairs of main nerves and the intramarginal one slightly raised but indistinct, edges slightly recurved; length 3·5 to 5 in.; breadth 1·5 to 1·75 in.; petiole about ·5 in. *Panicles* mostly terminal, but a few of smaller size from the upper leaf-axils, about half as long as the leaves while in flower, many-flowered, much condensed, corymbose, broader than long; the peduncles short, stout, somewhat 4-angled like the stout, short branches. *Flowers* in threes at the ends of the branchlets, sessile, white, clavate in bud. *Calyx* ·35 in. long, funnel-shaped, tapering gradually to the base: the mouth 5-lobed, the lobes broad, rounded, and with pale, cartilaginous tips. *Petals* 5 orbicular, glandular-dotted, much longer than the calyx-lobes, apparently calyprate. *Fruit* (unripe and excluding the long calyx-tube) globular-ovoid, ·75 to 1 in. in length, and ·75 in. in diam., crowned by the large, stout, withered, 5-toothed calyx-limb ·25 in. long.

PERAK: *Wray* 3990; *King's Collector* 5309, 6584.

69. *EUGENIA PEARSONIANA*, King n. sp. A tree 80 to 100 feet high; young branches thicker than a crow-quill, pale brown or whitish, terete. *Leaves* coriaceous, ovate, the base rounded, the apex caudate-acuminate, the edges somewhat recurved; upper surface olivaceous-brown, shining, the numerous nerves faint, the midrib depressed; lower surface brown, dull, the nerves fainter than on the upper, the midrib sharp and prominent; length 2·75 to 4 in.; breadth 1·5 to 2 in.; petiole ·25 to ·3 in. *Panicles* terminal, 1·5 in. long, not pedunculate, branching from the base; the branches short, thick, slightly compressed and slightly 4-angled. *Flowers* in twos or threes at the ends of the branchlets, about ·5 in. long (including the stamens), white, clavate in bud, some sessile and others on very short, stout pedicels. *Calyx* ·25 in. long, funnel-shaped gradually tapering to the thick base; the mouth truncate. *Petals* 5, orbicular, calyprate. *Fruit* unknown.

PERAK: *King's Collector* 3526.

Allied to *E. Prainiana*, but differing in the truncate calyx-limb, sessile panicles and thinner young branches the bark of which moreover is nearly white.

70. *EUGENIA LÆVICAULIS*, Duthie in Hook. fil. Fl. Br. Ind. II, 492. A tree; young branches half as thick as a goose-quill, terete, very pale. *Leaves* coriaceous, oblong-lanceolate or oblong-elliptic, shortly and

abruptly acuminate, the base cuneate; upper surface dark-olivaceous (when dry) and shining, the midrib bold and depressed and the nerves not depressed but faint; lower surface chocolate-brown, dull, the numerous nerves and reticulations indistinct, the intramarginal line very close to the edge, faint; length 3·5 to 4·5 in.; breadth 1 to 1·6 in.; petioles ·2 to ·3 in. *Panicles* mostly terminal, but a few in the upper axils, condensed, much shorter than the leaves; branches few, crowded, very stout, obscurely 4-angled, shining. *Flowers* ·5 or ·6 in. long (including the stamens), in threes at the apices of the branchlets, the middle one on a short thick pedicel, the lateral pair sessile. *Calyx* ·25 in. long, campanulate, tapering regularly to the base; the mouth with 5 small, bluntly triangular teeth reflexed after flowering. *Petals* orbicular, much larger than the calyx-teeth, calyptrate. *Fruit* when ripe as large as a cherry, depressed at both ends, pulpy, the apex crowned by the small circular remains of the calyx. Duthie in Hook. fil. Fl. Br. Ind. II, 492 (in part). *E. inophylla*, ? in Wall. Cat. 3600 and not of Roxb.

MALACCA: *Maingay* Herb. prop. 3012 (K.D. 753 in part). PENANG: *Wallich*; *Curtis* 750, 666, 2246, 2247.

Hitherto collected only in Malacca and Penang. This is one of three plants issued doubtfully by Wallich as *E. inophylla*, Roxb.; and one of two issued from Herb. Kew, as 753 *Maingay*. There are in Herb. Kew, three *Maingayan* sheets under the distribution 753. Two of these bore the same number in *Maingay's* own collection, viz., 3012: the third, which is imperfect, bore his 1558, and is a different plant from his 3012 and is really *E. anisosepala*, Duthie. *E. laxicaulis* is allied to *E. oblata*, Roxb., but has more contracted panicles with much shorter branches, more oblong flower-buds, shorter stamens, more faintly nerved leaves which are usually smaller.

71. *EUGENIA GOODENOVII*, King n. sp. A tree, 50 to 70 feet high; young branches somewhat thicker than a crow-quill, terete, with compressed nodes, the bark dull pale yellowish-grey. *Leaves* coriaceous, oblong-elliptic, rarely somewhat lanceolate, the base much cuneate, the apex acute or sometimes shortly and bluntly acuminate; both surfaces rather dull when dry, yellowish-brown, the lower somewhat paler, the main-nerves many pairs, inconspicuous on either surface as are the secondary nerves and the reticulations; the intramarginal nerve faint, about ·1 in. from the edge; length 3·5 to 5·5 in.; breadth 1·5 to 2 in.; petioles ·2 to ·3 in. *Panicles* terminal and from the axils of a few of the upper leaves, 1·5 to 2 in. long and about as broad; the branches few, spreading, obscurely 4-angled. *Flowers* shortly pedicelled, (when expanded) from ·2 to ·3 in. across, the buds clavate from ·2 to ·3 in. long. *Calyx* funnel-shaped, the mouth with 4 broad, rounded lobes. *Petals* 4, sub-orbicular, calyptrate. *Fruit* broadly urn-shaped, the apex broad

and truncate, crowned in the middle by the short conical remains of the style, about .5 in. in diam. when dry and about .6 in. long, the base with a fleshy papilla and a short stout stalk. *Syz. rigidum*, Wall. Cat. 3581.

MALACCA: ?; Wallich; Goodenough 1759. SELANGOR: King's Collector 8741. DISTRIB.—Java.

Wallich's specimens of this are referred in the Flora of British India to *E. chlorantha*, Duthie. The better examples collected since Wallich's time by Messrs. Goodenough and Kunstler however shew this to be a distinct species, Wallich's specific name for which would have been retained but for the priority of DeCandolle's *Eugenia rigida*. This strongly resembles *E. Zippelliana*, Miq., as that species is represented at Kew.

72. *EUGENIA LINOCIEROIDEA*, King. A tree, 40 to 50 feet high; young branches when in flower as thick as a crow-quill (thicker when in fruit), dark-brown. *Leaves* coriaceous, lanceolate, shortly acuminate, the base cuneate; both surfaces of an olivaceous, leaden colour when dry, the upper very dark and shining, the nerves numerous, indistinct: the lower paler and dull, the nerves straight spreading, black, inter-arching less than .05 in. from the edge, the reticulations not prominent: length 2 or (rarely) 3 in.; breadth .6 to 1 in.; petioles .1 in. *Panicles* terminal, as long as the leaves when in flower (longer when in fruit), much branched, many-flowered, broader than long: main-branches sub-horizontal, somewhat 4-angled, the branchlets acutely so. *Flowers* .4 in. long (including the stamens), sessile, the buds clavate. *Calyx* .3 in. long, funnel-shaped, the lower half narrowed into a vertically ridged pseudo-stalk; the mouth with 4 deep, broad, rounded lobes. *Petals* 4, sub-orbicular, calyprate. *Fruit* oblong, with deep rugulose, vertical ridges, the apex crowned by the enlarged calyx-limb and its 4 inflexed teeth: length (unripe) .35 in.

PERAK: King's Collector 4580, 7980, 8094; Wray 1898, 2595.

73. *EUGENIA MYRTIFOLIA*, Roxb. Hort. Beng. 37; Fl. Br. Ind. II, 490. A shrub or small tree; young branches 4-angled, pale-brown, the older terete, greyish. *Leaves* thinly coriaceous, lanceolate to broadly ovate, shortly acuminate, the base acute: both surfaces shining, dotted, when dry brown, the lower paler; nerves close and numerous, thin but distinct on both surfaces; length 1.5 to 2.5 in.; breadth .75 to 1.35 in.; petiole .15 to .2 in. *Panicles* mostly terminal but a few from the upper leaf-axils, pedunculate, longer than the leaves; branches lax, spreading, corymbose, 4-angled. *Flowers* .3 in. long (including the stamens) sessile or pedicellate on the apices of the branchlets in twos or threes. *Calyx* .15 in. long, clavate, the mouth with 4 very narrow lobes or almost truncate. *Petals* 4, orbicular, calyprate. *Fruit* globular, pisi-form, pulpy, bluish-black, smooth, crowned by the cupular, truncate calyx-

limb, 1-seeded. Duthie in Hook. fl. Fl. Br. Ind. II, 483; Wight Ill. II, 15; Ic. t. 618; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 67; For. Fl. I, 486. *Syzygium myrtifolium*, DC. Prodr. III, 261; Wall. Cat. 3571; Miquel Fl. Ind. Bat. 1, Pt. I, 456. *C. oleina*, Wight Ill. II, 15.

SINGAPORE: *Wallich*. PENANG: *Wallich*. PERAK: *Wray* 2703; *King's Collector* 8379.

74. *EUGENIA STAFFIANA*, King n. sp. A shrub, 2 to 6 feet high; young branches rigid, slender, 4-angled, the bark brown and deciduous in long flakes. *Leaves* very coriaceous, lanceolate or broadly elliptic tapering to the blunt sub-acute (occasionally rounded and retuse) apex, the base slightly cuneate or rounded; both surfaces olivaceous-brown when dry, the upper with large scattered pits, the lower paler, not dotted or pitted, nerves and reticulations very indistinct on both surfaces, the midrib distinct on the lower: length  $\cdot 5$  to 1 in.; breadth  $\cdot 4$  to  $\cdot 8$  in.; petiole under  $\cdot 1$  in. *Panicles* terminal, shorter than or as long as the leaves, few-flowered; the branches few, rigid, stout, square and with 4 thick wings. *Flowers*  $\cdot 3$  in. long, with several bracteoles at their insertion on the short, stout, papillose pedicels. *Calyx*  $\cdot 15$  in. long, narrowly campanulate, slightly inflated below the middle, ribbed and densely papillose externally, the mouth slightly expanded and with 4 or 5 spreading rounded teeth. *Petals* orbicular, free. *Stamens* about  $\cdot 15$  in. long. *Fruit* sub-globular, crowned by the calyx lobes, white.

PERAK: *Scortechini* 336; *Wray* 216, 1582, 1619: at elevations of 5000 to 7000 feet.

This belongs to a group of dwarf montane species of *Eugenia* well-represented on the mountains of Ceylon and Southern British India and of which some species from the mountain of Kina Balu in Borneo have recently been described and figured in the Linnæan Transactions by Dr. O. Stapf. of the Kew Herbarium. The nearest ally of this is *E. kinabaluensis*, Stapf., from which this is distinguished by its larger inflorescence with winged branchlets, granular calyx-tube and pedicels, and less rotund leaves, entire (not retuse) at the apex.

75. *EUGENIA WRAYI*, King n. sp. A small tree; young branches obtusely 4-angled, brown (when dry) smooth, the older terete, rough, the bark grey. *Leaves* thickly coriaceous, broadly elliptic or sub-rotund the apex obtuse or sub-obtuse entire, not narrowed at the base: upper surface brown, the nerves and reticulations faint, the midrib depressed; lower surface pale sub-glaucous, the nerves and reticulations numerous and distinct, the midrib broad; length  $\cdot 75$  to 1.35 in.; breadth  $\cdot 65$  to 1.15 in.; petiole  $\cdot 1$  in. or less. *Panicles* solitary, compact, terminal, in a short peduncle; its branches short and stout, slightly 4-angled, not winged or papillose. *Flowers* greenish,  $\cdot 35$  in. long, (including the stamens) sessile in clusters of 3 or 4 at the ends of the branchlets, with a single deciduous bracteole at the base of each, the buds

shortly clavate. *Calyx* funnel-shaped, .15 in. long; not much narrowed to the base, smooth; the mouth with 5 unequal, broad rounded lobes. *Petals* calyptrate. *Stamens* short. *Fruit* unknown.

PERAK: at elevations of 5,000 to 7,000 feet; *Wray* 321, 1504, 3859; *Scortechini* 313.

This is another of the dwarf montane species. It resembles the Nilgiri *E. calophyllifolia*, Wight, very closely indeed and the differences between the leaves of the two can be appreciated only by comparison of actual specimens. The reticulations in the lower surface of this are finer and the enclosed spaces shorter. *E. calophyllifolia* has 4-merous flowers and the flowers of this are 5-merous. Fruit of this is at present unknown. From it, when found, a good character may, it is hoped, be obtained.

76. *EUGENIA SETOSA*, King n. sp. A shrub or creeper: young branches as thick as a crow-quill, dark-brown, densely clothed on the rachis and branches of the inflorescence with coarse subulate hairs mixed with brown scurf. *Leaves* thinly coriaceous, narrowly oblong-lanceolate, shortly and abruptly acuminate, the base rounded; upper surface (when dry) olivaceous with minute scattered black dots, the lower tinged with brown, minutely pustulate: nerves very numerous and close, sub-horizontal, interarching very near the slightly recurved minutely undulate edge; length 1.35 to 2.75 in.; breadth .4 to .85 in.; petiole under .1 in. *Panicles* axillary and terminal, about as long as the leaves, pedunculate, with spreading many-flowered branches. *Flowers* crowded on the branchlets, .4 in. long (including the stamens), clavate, the buds with globular apex abruptly contracted below, sessile or on short pedicels. *Calyx* campanulate above, contracted about the middle into a pseudo-stalk; the mouth truncate but with 5 small triangular deciduous lobes. *Petals* orbicular, deciduous. *Fruit* turbinate, crowned by the small truncate calyx-limb, minutely covered with pellucid, granule-like glands; length and breadth about .35 in.

PERAK: *Wray* 2704; *King's Collector* 5266, 6601, 6793.

77. *EUGENIA INASENSIS*, King n. sp. A small white-flowered tree; young branches thicker than a crow-quill, terete with compressed nodes; the bark pale and rather smooth. *Leaves* coriaceous, broadly elliptic to elliptic-oblong, sometimes slightly obovate, much tapered to the base, the apex with a short, abrupt blunt point, the edges recurved; when dry, the upper surface shining, pale yellowish-brown, the midrib depressed; the lower paler and dull, the midrib bold; main-nerves inconspicuous on both; length 2.5 to 4 in.; breadth 1.25 to 2.25 in.; petiole .2 to .4 in. *Panicles* much shorter than the leaves, terminal or from the upper leaf-axils, solitary or several together, pedunculate, usually 3-branched, the peduncle and branches dark-coloured, compressed. *Flowers* in threes, .3 to .4 in. in diam. when expanded, their

buds obovoid nearly  $\cdot 2$  in. long. *Calyx* campanulate, sessile, not tapering into a pseudo-stalk, the mouth with 5 small rounded lobes, or truncate. *Petals* 5, orbicular-calyptrate. *Fruit* unknown.

PERAK. or Gunong Inas at elevations of about 5,000 feet; Wray 4144, 4150, 5154.

A species known only from Mount Inas. It is allied to *E. subdecussata*, Duthie, in many respects, but differs from that species in having petiolate leaves tapering much to the base and having recurved edges. The main nerves are, moreover, less distinct and the under surface is not dotted. The twigs also differ in being very pale in colour instead of brown.

78. *EUGENIA SUBDECUSSATA*, Duthie in Hook. fil. Fl. Br. Ind. II, 491. A tree or shrub; young branches sub-terete, compressed below the nodes, brown. *Leaves* sessile or nearly so, coriaceous, elliptic or oblong-elliptic, rarely somewhat obovate-elliptic, (sub-rotund in *VAR. montana*), tapering but little to either end, the apex sometimes with a short blunt acumen, the base minutely cordate; both surfaces dark-brown when dry, the upper polished; the lower slightly paler and pellucid-dotted; nerves numerous but not prominent on either surface, the midrib prominent on the lower; length 2 to 5.5 in.; breadth 1.35 to 3 in.; petiole very short or absent (about  $\cdot 1$  in. long in *VAR. montana*). *Panicles* terminal, shorter than the leaves, pedunculate, the peduncle and all the branches and branchlets much compressed; the branches short, crowded. *Flowers*  $\cdot 35$  in. long (including the stamens), sessile in heads on the apices of the branchlets; the buds shortly clavate. *Calyx* funnel-shaped, the mouth with 5 small triangular teeth. *Petals* calyptrate. *Fruit* globular, crowned by the small calyx-cup, smooth,  $\cdot 5$  or  $\cdot 6$  in. in diam. *Syzygium subdecussatum*, Wall. Cat. 3589 *in part*.

SINGAPORE: Wallich; Ridley 4662, 4814, 9498, 10389. MALACCA: Maingay (K.D.) 740; Derry 476, 975; Ridley 1985. PERAK: King's Collector; Scortechini; very common from the sea-level to elevations of 5,000 feet.

A species readily recognised by the elliptic polished leaves, tapering very little to either end, also by the compressed short branchlets of the inflorescence and the shortly clavate flowers.

*VAR. colorata*, King; *panicle* very condensed, flower-buds longer than in the typical form, leaves when dry tinged with red. *E. colorata*, Duthie in Hook. fil. Fl. Br. Ind. II.

MALACCA: Maingay (K.D.) 749.

Only a single specimen of this is known. It appears to me a form of *E. subdecussata*, and unworthy of specific rank.

*VAR. montana*, King; shrubby; *leaves* often sub-rotund or obovoid elliptic, from 1 to 2.5 in. long; *panicles* longer than the leaves.



PERAK : *Scortechini* 294 ; *Wray* 217, 3844. *King's Collector* 8030.

*Syzygium apodum*, Miq., a Sumatran species, closely resembles this but has thicker leaves with strongly recurved margins.

79. *EUGENIA PUNCTULATA*, King. A tree, 30 to 50 feet high ; young branches thinner than a goose-quill, slightly compressed, the bark pale-brown, deciduous in flakes, and the older branches grey. *Leaves* coriaceous, obovate or oblanceolate, the apex broad and usually blunt but sometimes with a short point, much narrowed at the base, the edges slightly recurved ; upper surface olivaceous (when dry), shining, the nerves indistinct ; lower olivaceous-brown, the numerous straight nerves and reticulations faint ; length 1·5 to 3 in. ; breadth 1 to 1·75 in. ; petiole ·2 to ·25 in. *Panicles* rather lax, terminal, longer than the leaves (often twice as long, especially in the fruiting stage) : branches numerous, spreading, compressed or 4-angled, many-flowered. *Flowers* sessile at the apices of the branchlets with a few scarious bracteoles at their bases. *Calyx* campanulate, only ·1 in. long, its mouth obscurely 4-toothed, smooth. *Petals* deciduous. *Fruit* ovoid, much wrinkled when dry and crowned by the wide calyx-limb, ·4 in. long (unripe). *Syzygium punctulatum*, Wall. Cat. 3583. *Jambosa punctulata*, Miq. Fl. Ind. Bat. Suppl. 310.

SINGAPORE : *Wallich*. PERAK : *King's Collector* 3475, 3782, 6426, 6671, 6937, 10984 ; *Wray* 1125, 3972. SINGAPORE : *Ridley* 3893, 4988, 4989, 6540. MALACCA : *Derry* 1154. *DISTRIB.*—Borneo.

This is doubtfully referred in the *Flora of British India* to *E. pyrifolia*, Wall. The more complete specimens collected since that *Flora* was published show that *E. punctulata* is a perfectly distinct species.

80. *EUGENIA BRACTEOLATA*, Wight Ill. II, 15 : Ic. t. 531. A tree, 30 to 60 feet high ; young branches boldly 4-angled, pale-brown, about as thick as a goose-quill. *Leaves* coriaceous, oblong-obovate or oblanceolate, the apex broad and with a short blunt apiculus, rarely sub-acute, the base cuneate : when dry the upper surface dark-brown, shining, obscurely pitted, the nerves faint and impressed ; the lower paler brown, neither pitted or dotted, the numerous pairs of horizontal nerves and the wide reticulations slightly distinct, the midrib very prominent ; length 3 to 5 in. ; breadth 1·5 to 2 in. ; petiole ·3 to ·5 in. *Panicles* terminal, as long as the leaves, with small, ovate, concave bracteoles at all its nodes, corymbose, many-flowered, the branches few, the branchlets numerous and all (like the peduncle) acutely 4-angled and grooved. *Flowers* in threes at the apices of the branchlets : bibracteolate at the base and on short pedicels, ·3 in. long including the stamens, globular-clavate in bud. *Calyx* ·15 in. long, shortly infundibuliform, rugulose, the mouth with 4 rounded lobes. *Petals* whitish, calyptrate. *Fruit*

oblong, tapering to each end, the apex crowned by the 4 persistent calyx-teeth, minutely rugulose, length (*very unripe*) .25 in. Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 66; For. Flora Burm. I, 482; Duthie in Hook. fil. Fl. Br. Ind. II, 488.

MALACCA: *Maingay* (K.D.) 770. PENANG: *Curtis* 1089, 3175. PERAK: very common. DISTRIB.—Burma: *Griffith* (K.D.) 2387; *Helper* (K.D.) 2386, 2373.

Easily recognised by its profusely bracteolate inflorescence and acutely 4-angled branches and panicle. *Curtis's* 1089 is when dry of a much paler colour than the Perak specimens, otherwise it agrees.

81. *EUGENIA VENULOSA*, Wall. in Cat. ex Duthie in Hook. fil. Fl. Br. Ind. II, 490. A tree, 20 to 25 feet high; young branches thicker than a crow-quill, terete, pale. *Leaves* coriaceous, elliptic-rhomboid to oblanceolate, the apex obtuse or sub-acute, the base cuneate; upper surface pale-brown often with an olivaceous tint (when dry), dotted, shining, duller, the nerves faint; under surface paler, and not olivaceous, the main-nerves 10 to 14 pairs, rather straight, sub-erect, not much more prominent than the secondary nerves, both sets connected by numerous loops, the intramarginal nerves about .1 in. distant from the slightly recurved edge; length 2 to 3 in.; breadth .8 to 2.2 in.; petiole .1 to .15 in. *Panicles* terminal, broadly corymbose, much-branched, usually shorter or not much longer than the leaves (longer in var.); peduncle and branches 4-angled, the flowers in threes at the apices of the branchlets, clavate in bud, sessile. *Calyx* .2 in. long, rugulose, campanulate in its upper half, the lower contracted, the mouth truncate, or slightly lobed. *Petals* calyptrate. *Fruit* globular, submamillate, the apex with a deep, circular, entire pit bounded by the calyx-walls, .5 in. in diam.

MALACCA: *Griffith* (K.D.) 2405; *Maingay* (K.D.) 741. SINGAPORE: *Wallich*; *Ridley* 5985. JOHORE: 4986. PERAK: *Scortechini* 188; *Wray* 3016.

VAR. *macrothyrsa*; *panicles* longer than the leaves and as much as 4 in. broad.

MALACCA: *Griffith* (K.D.) 2405; *Derry* 21; *Maingay* (K.D.) 719. JOHORE: *Ridley* 4196. PERAK: *Scortechini* 188.

82. *EUGENIA PSEUDO-SUTILIS*, King. A tree, 30 or 40 feet high; young branches pale greyish-yellow, or almost white, slightly thicker than a crow-quill, terete. *Leaves* very coriaceous, narrowly oblong-elliptic tapering from the middle to each end, the apex sub-acute or obtuse, the base cuneate; both surfaces when dry dull, pale-brown; the upper pellucid-pitted and the nerves faint; the lower paler not pitted, the midrib prominent but the 5 to 7 pairs of main-nerves faint, sub-erect, curved, not interarching near the edge, length 2.25 to 4 in.;

breadth 1·1 to 1·25 in. petiole ·5 to ·75 in. Panicles shorter than or nearly as long as the leaves, axillary and terminal, often 2 or 3 together, few-branched; the branches divaricate, 4-angled, few-flowered, trichotomous. Flowers sessile, small. Calyx only ·05 in. long, at first almost cylindrical slightly narrowed to the base, afterwards urn-shaped and finally globular, the mouth with a projecting rim, truncate but with 4 broad, shallow teeth. Fruit the size and shape of a pepper-corn, smooth, surmounted by the small remains of the calyx and by the base of the style. *E. brachiata*, Duthie (not of Roxb.) in Hook. fil. Fl. Br. Ind. II, (*in part*).

PENANG: Curtis 3475. PERAK: King's Collector 6946. SINGAPORE: Ridley 4990.

VAR. *platyphylla*; leaves broader than in the typical form, elliptic, oblanceolate-oblong, sub-acute or with broad rounded apex, the base always cuneate.

SINGAPORE: Ridley 3962. MALACCA: Derry; Scortechini. PERAK: PENANG: Curtis 32. *Syzyg. ribesoides*, Wall. Cat. 3553. *Syzyg. cinereum*, Wall. Cat. 3576.

VAR. *subacuminata*; leaves bluntly acuminate.

PENANG: King's Collector 1793.

This species closely resembles *S. subtile*, Miq., in its pale branches, in the shape and texture of its leaves and in its flowers. The leaves however have only about one-third as many nerves. The two are however very near.

83. EUGENIA MICROCALYX, Duthie in Hook. fil. Fl. Br. Ind. II, 493. A tree, 40 to 50 feet high; young branches slender, 4-angled, brown. Leaves coriaceous, oblong-obovate or oblong-lanceolate, sub-acute, much narrowed from the middle to the base; upper surface blackish-brown when dry, the nerves faint: lower warm-brown the nerves and midrib prominent: main-nerves 10 to 14 pairs, rather straight, ascending, interarching ·15 in. from the edge in a bold wavy line; the edges much and irregularly recurved when dry; length 2·25 to 3·5 in.; breadth 1·25 to 2 in.; petiole ·25 to ·3 in. Panicles terminal and axillary, as long as or longer than the leaves, on long slender peduncles; branches and branchlets lax, spreading, compressed, with minutely triangular persistent bracteoles at their bases. Flowers yellowish-white, sessile, in heads at the ends of the branchlets, small (only ·2 in. long including the stamens), bracteolate at the base. Calyx ·15 in. long, funnel-shaped, minutely granular; the mouth with 4 small distant triangular lobes. Petals 4, calyptrate. Fruit (probably unripe) as large as a pepper-corn, globular, crowned by the wide calyx-limb, white tinged with red.

MALACCA: Griffith (K.D.) 2410 (*in part*), 2411. Derry 3531; Mangay (K.D.) 727, 731. SINGAPORE: Ridley 2054. PERAK: King's Collector 5986, 5990, 6627, 8129, 8700, 10417, 10735.

VAR. *obovata*; leaves obovate or obovate-lanceolate.

PERAK: King's Collector 6627, 10417, 8129, 8700, 5990, 5986, 8700.

84. *EUGENIA SCOPARIA*, Wall. Cat. 3594. A tree? Young branches about as thick as a crow-quill, terete, pale-brown, smooth. Leaves coriaceous, oblanceolate to obovoid, occasionally elliptic-lanceolate, the apex sub-acute or obtuse, the base always cuneate; upper surface brown and with numerous small pits, the lower paler and with numerous minute black glands, midrib depressed on the upper and prominent on the lower surface, the nerves almost invisible on both; length 1.25 to 2.25 in.; breadth .6 to 1.1 in. Panicles terminal and from the upper leaf axils, longer than the leaves, on slender, rather long, 4-angled peduncles bearing near the apex a few divaricate laxly-flowered branches. Flower-buds clavate, about .15 in. long; mouth of calyx wide, shortly 4-lobed, the tube short and abruptly contracted at the base. Fruit almost globular with a truncate apex, smooth, .1 in. in diam. Duthie in Hook. fil. Fl. Br. Ind. II, 489. *Syzygium scoparium*, Wall. MSS. ? *S. avene*, Miq. Fl. Ind. Bat. Suppl. I, 312.

SINGAPORE: Wallich. MALACCA: Goodenough 1649.

Specimens of a species nearly allied to this were collected at Changi in Singapore by Mr. Ridley in October 1890 and again at Selangor (Herb. 7555) in 1896. They differ in having the leaves broader, more pronounced obovate, and almost without dots or glands.

85. *EUGENIA MYRIANTHA*, King n. sp. A tall tree; young branches slightly thicker than a crow-quill, terete. Leaves very coriaceous, oblanceolate sub-acute, the base much narrowed; when dry upper surface pale-brown, shining, dotted; the lower darker brown, dull, sub-glaucous; nerves 3 or 4 pairs, on each side very faint, distant, ascending; reticulations on both surfaces invisible, the edges slightly recurved; length 1 to 1.75 in.; breadth .5 to .75 in.; petiole .25 to .3 in. Panicles very numerous, longer than the leaves, terminal or in the upper axils, pedunculate; branches numerous, spreading, the branchlets quadrangular and bearing at their apices numerous small sessile flowers with broad rounded bracteoles at their bases. Flowers only .1 in. long, truncate in bud. Calyx cylindrical, the mouth very obscurely lobed. Fruit unknown.

PERAK: *Scortechini* 337.

A species resembling *E. microcalyx*, Duthie, in its inflorescence and very small flowers and also in the character of the venation of the leaves which however are much smaller.

86. *EUGENIA VERECUNDA*, Duthie in Hook. fil. Fl. Br. Ind. II, 496. A small tree; young branches as thick as a crow-quill, pale yellow, terete, smooth. Leaves thinly coriaceous, ovate, acuminate, the base

broadly cuneate; upper surface brown when dry, shining; the lower very pale brown, dull; the numerous nerves, reticulations and intramarginal nerve rather distinct on both surfaces but especially on the upper when dry; length 2 to 3 in.; breadth .75 to 1.5 in.; petiole .35 to .6 in.; slender. *Panicles* crowded at the apices of the branches and in one or two of the upper leaf-axils, shorter than the leaves, on short peduncles, the branches slender, lax, 4-angled. *Flowers* only .15 in. long, sessile or on short pedicles, clavate, constricted immediately below the turbinate apex. *Calyx-tube* somewhat ribbed, the wide mouth with 4 shallow distant lobes. *Petals* calyptrate. *Fruit* unknown. *Syzygium verecundum*, Wall. Cat. 3579.

MALACCA: *Griffith*. PENANG: *Wallich*. SINGAPORE: *Ridley* 9486. PANGKORE: *Scortechini* 163.

87. *EUGENIA SWETTENHAMIANA*, King n. sp. A tree, 60 to 70 feet high; young branches thinner than a goose-quill, terete, very pale, faintly striate. *Leaves* thickly membranous, elliptic-oblong to obovate-lanceolate narrowed to the rounded base, the apex shortly and bluntly acuminate; upper surface dark-brown the nerves and midrib impressed; lower surface pale-brown, the midrib and main-nerves prominent; the latter 9 to 12 pairs curved and interarching to form a stout intramarginal nerve .1 in. from the margin, the reticulations indistinct on both surfaces; length 3.5 to 4 in.; breadth 1.2 to 1.75 in.; petiole .25 to .35 in. *Panicles* several together at the ends of the branches, as long (with their peduncles) as the leaves or longer, each bearing near its apex a few slender 3-flowered umbellate branches, the branchlets, peduncle-branches and branchlets compressed and 4-angled. *Flowers* greenish-white, .35 in. across when expanded; the buds before expansion clavate, .2 in. long. *Calyx* funnel-shaped, sessile, contracted at the base, its mouth with 4 broad, rounded, deciduous lobes. *Petals* 4, sub-orbicular, free, as large as the calyx-lobes. *Stamens* short. *Fruit* unknown.

PERAK: *Scortechini*; *King's Collector* 7590.

A species near *E. pseudo-subtile*, King, but with oblanceolate leaves and long slender pedunculate umbellate panicles crowded at the apices of the twig. Named to commemorate the help afforded in the Botanical exploration of Perak by Sir Frank Swettenham, K.C.M.G.

88. *EUGENIA ACUMINATISSIMA*, Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 67; Fl. Br. Burm. I, 487. A tree, 20 to 50 feet high; young branches about as thick as a crow-quill, slightly compressed, the bark pale-brown, peeling off in vertical flakes. *Leaves* coriaceous, lanceolate or oblong-lanceolate, the apex caudate-acuminate, the base cuneate; both surfaces pale-brown when dry, the upper tinged with olivaceous, shining, the midrib depressed, the main-nerves 15 to 20 pairs, slightly raised, faint; lower surface darker than the upper, the

nerves faint, the intramarginal line rather less than .1 in. from the edge; length 2.5 to 4 in.; breadth .9 to 1.4 in.; petiole .2 to .25 in. *Panicles* usually large, lax, many-branched, pedunculate, longer than the leaves, mostly terminal but some also from the upper leaf-axils: branches acutely 4-angled, the upper also compressed. *Flowers* numerous, small, white, sessile, usually in threes from the ends of the branchlets, .2 in. long (including the stamens). *Calyx* turbinate-clavate, nearly .2 in. long, the lower half contracted, the upper part turbinate its mouth truncate or very obscurely toothed. *Petals* 5 or 6, minute, rotund, clawed, erose, free. *Fruit* depressed-globular, crowned by the minute circular remains of the calyx, .4 to .5 in. broad and about .35 to .4 in. long. Duthie in Hook. fil. Fl. Br. Ind. II, 483. *Jambosa acuminatissima*, Hassk. in Flora (1849), 592; Miq. Fl. Ind. Bat. I, 438. *Syzyg. altissimum*, Wall. Cat. 3588. *Myrtus acuminatissima*, Blume Bijdr. 1088.

In all the Provinces except the Nicobar Islands. **DISTRIE.**—Burma, Sumatra.

89. *EUGENIA KUNSTLERI*, King n. sp. A tall tree; young branches thinner than a goose-quill, terete, pale. *Leaves* thinly coriaceous, ovate-lanceolate, acuminate, much narrowed at the base: upper surface brown (when dry), with small depressed dots, the nerves indistinct: lower pale-brown with numerous small black dots: main-nerves bold on the under surface, 8 to 10 pairs, curving upwards and interarching .1 to .15 in. from the edge; length 3.5 to 5.5 in.; breadth 1.5 to 2.25 in.; petiole .4 to .5 in. *Panicles* terminal or from the upper leaf-axils, much shorter than the leaves; the short peduncle and the numerous spreading branches 4-angled, with many small pustules, minutely bracteolate at the divisions. *Flowers* small, numerous, greenish-yellow, in threes at the apices of the branchlets, sessile. *Calyx* .1 in., funnel-shaped, the mouth with 4 obscure broad teeth. *Petals* orbicular. *Fruit* ovoid, contracted somewhat at the base and crowned by the short wide calyx-limb, smooth, .5-.6 in. long.

**PERAK:** King's Collector 3310, 3680. **PENANG:** Curtis 179.

A species of which the nearest allies are *E. pustulata*, Duthie, and *E. brachiata*, Roxb., but with more slender panicles and smaller flowers than the former and more acuminate leaves than the latter. It also resembles *E. minutiflora*, Miq., but that has broadly ovate shortly acuminate leaves and shorter panicles.

90. *EUGENIA PUSTULATA*, Duthie in Hook. fil. Fl. Br. Ind. II, 495. A tree, 20 to 50 feet high; young branches thinner than a goose-quill, terete, pale-brown, minutely warted. *Leaves* coriaceous, oblong or oblong-lanceolate, shortly acuminate, much narrowed to the base: upper surface (when dry) smooth, shining, greenish, the nerves usually

indistinct; the lower brown with many minute papillæ especially on the prominent midrib; main-nerves 10 to 14 pairs, curving upwards and interarching  $\cdot 1$  in. from the margin, pale, and prominent on the lower surface; length 4.5 to 7 in.; breadth 1.35 to 2.25; petiole  $\cdot 3$  to  $\cdot 4$  in. *Panicles* small, several together, shorter than the leaves, terminal or from the upper leaf-axils, branching from the base, the branches spreading, papillose, stout, 4-angled. *Flowers* few, sessile,  $\cdot 25$  in. long (including the stamens), truncate in bud. *Calyx* campanulate, minutely papillose externally; the mouth wide and with 4 short, broad, sub-acute lobes. *Petals* calyptrate. *Fruit* globular, the apex with a circular pit surrounded by the wide, short, cupular remains of the calyx, smooth,  $\cdot 4$  to  $\cdot 5$  in. in diam.

MALACCA: *Maingay* (K.D.) 751. SINGAPORE: *Ridley* 4657, 4979, 6420, 6421. PERAK: *King's Collector* 3724, 6758, 7536.

A species recognisable by its short stout panicles with short widely campanulate flowers, and pustulate stems and panicles. The leaves (when dry) are distinguished by their colour, greenish above and brown beneath.

91. *EUGENIA KOORDERSIANA*, King n. sp. A tree, 40 to 80 feet high; young branches somewhat thicker than a crow-quill, terete, dark purplish-brown when dry. *Leaves* coriaceous, elliptic or narrowly ovate, rarely oblanceolate, shortly caudate-acuminate, the base cuneate; both surfaces (when dry) very dark brown, the lower slightly paler; main-nerves 8 to 10 pairs, curving slightly and interarching  $\cdot 1$  in. or more from the edge, impressed on the upper surface slightly prominent on the lower; length 2.75 to 3.75 in.; breadth 1 to 1.75 in.; petiole about  $\cdot 3$  in. *Panicles* terminal, usually much longer than the leaves, corymbose, many-branched, the peduncle and branches sharply 4-angled, compressed at the nodes; branchlets 3- to 5-flowered at the apex. *Flowers* white, clavate in bud, sessile. *Calyx* campanulate, 4-angled,  $\cdot 15$  in. long, contracted for half its length into a pseudo-stalk; the mouth with 4 deep, broad, rounded lobes. *Petals* 4, sub-rotund, calyptrate. *Fruit* unknown.

PERAK: *Scortechini* 257; *King's Collector* 6208, 6233, 6385.

When dry the leaves and panicles of this are very dark-coloured. It is allied to *E. pseudo-subtilis* and *E. Clarkeana*, but differs from both in leaves. I have named it in honour of Dr. S. H. Koorders of the Forest Dept. in Netherlands India.

92. *EUGENIA SIMULANS*, King n. sp. A tree, 30 to 40 feet high, with pendulous branches: young branches terete, the very youngest compressed and about as thick as a crow-quill, brown. *Leaves* thinly coriaceous, oblong or elliptic-lanceolate, shortly and rather bluntly acuminate, the base cuneate; both sides dark-brown and shining when dry, the lower paler and duller, slightly olivaceous; nerves numerous,

straight, inconspicuous like the reticulations, intramarginal nerve very near the edge; length 4·5 to 5·5 in.; breadth 1·75 to 2·25 in.; petiole ·3 to ·4 in. *Panicles* mostly axillary, sometimes terminal, 3 to 4 in. long, pedunculate, pyramidal, the branches nearly horizontal, all terete. *Flowers* mostly in threes at the apices of the branchlets, sessile, clavate in bud. *Calyx* nearly ·15 in. long, obconic, with a sub-obtuse base; the mouth thickened, undulate, indistinctly 5-toothed. *Petals* calyptrate. *Stamens* unequal. *Fruit* unknown.

PERAK: *Scortechini* 83, 274.

This resembles *E. Bernardi*, King, but differs in having clavate, not shortly obovoid, flower-buds, and in its panicles being usually lateral not terminal. The leaves of the two are much alike. Ridley's specimens collected in the garden jungle (8104 and 9845) probably belong to this but the panicle is laxer and its branches thinner.

93. *EUGENIA CURTISII*, King n. sp. A tree, 60 to 80 feet high; young branches thinner than a goose-quill, terete, the bark brown and peeling off in flakes. *Leaves* coriaceous, oblong-lanceolate or oblong-elliptic, rarely oblanceolate, the apex shortly and bluntly acuminate, the base cuneate, the edges slightly recurved when dry, both surfaces when dry pale olivaceous-brown, shining, obscurely pustulate, the lower less shining and darker in colour than the upper and with numerous very distinct minute conical concolorous pustules; the midrib depressed on the upper but prominent and pustulate on the lower surface; main and secondary nerves numerous, spreading, interarching less than ·1 in. from the slightly recurved edge, rather distinct on the lower but faint on the upper surfaces; length 3 to 5·5 in.; breadth 1 to 2 in.; petioles ·15 to ·2 in. *Panicles* terminal, from half as long as to as long as the leaves, branched from the base, dense, many-flowered, broader than long, the main-branches spreading, terete, the secondary and tertiary acutely 4-angled, all stout, the bark very granular, ultimately flakey. *Flowers* crowded at the ends of the branchlets, ·2 in. long (including the stamens), sub-globose in bud. *Calyx* campanulate, narrowed to the base and produced into a short pseudo-stalk, granular, shining: the mouth wide, with 5 small, broadly triangular teeth. *Petals* 5, papillose outside, orbicular, ? calyptrate. *Fruit* unknown.

PERAK: *Wray* 2968, 3102; *King's Collector* 6149.

VAR. *minor*; *flowers* smaller (rather less than ·2 in. long, including the stamens): *Calyx* not produced into a pseudo-stalk, its mouth obscurely lobed: leaves 2·5 to 3 in. long.

PERAK: *Wray* 194. MALACCA: *Harvey*.

94. *EUGENIA OPERCULATA*, Roxb. Hort. Beng. 37; Fl. Br. Ind. II, 486. A tree, 30 to 50 feet high; young branches slightly compressed, dotted and grooved at first, afterwards terete, the bark pale-brown at first but



ultimately grey. *Leaves* thinly coriaceous, variable in shape, ovate-oblong to elliptic and (in VAR. 2) obovate, shortly acuminate, bluntly apiculate or (in VAR. 2) obtuse, the base cuneate; both surfaces olivaceous when dry, the lower paler and minutely dotted: main-nerves distinct on the lower surface, 8 to 12 pairs, curved, ascending, becoming faint towards the intramarginal nerve: length 4 to 6 in.; breadth 1.6 to 2.2 in.; petiole .2 to .3 in. *Panicles* from the branches below the leaves, 2 or 3 inches long, pedunculate, spreading, lax; the branches divaricate, trichotomous, 4-angled. *Flowers* in threes at the apices of the branchlets, greenish, sessile. *Calyx* smooth, campanulate, contracted at the base; the limb truncate. *Petals* 4, calyprate, orbicular, concave, about .1 in. across. *Fruit* pisiform, smooth, very dark purple, pulpy, 1-seeded. Wight Ic. t. 552; Brandis For. Fl. 234; Kurz For. Fl. I, 483; Duthie in Hook. fil. Fl. Br. Ind. II, 498. *E. cerasoides*, Roxb. Hort. Beng. 92; Fl. Ind. II, 488; Wight Ic. t. 615; Miq. Anal. Bot. Ind. I, 27; Fl. Ind. Bat. I, Pt. 1, 443; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 66; For. Fl. I, 484. *Syzygium nervosum*, DC. Prodr. III, 260; Mem. Myrt. II, 16; Wall. Cat. 3551 A & B; 3553 B & C (under *E. ribesoides*); Benth. Fl. Hongk. 119; Thwaites Enum. 417; Miq. Fl. Ind. Bat. l.c. 460; Bedd. Fl. Sylv. Anal. Gen. CVI. *S. costatum*, *nodosum*, and *angkolanum*, Miq. Fl. Ind. Bat. l.c. 448. *Calyptranthes mangiferifolia*, Hance in Walp. Ann. II, 629. *C. costata*, Ham. in Wall. Cat. 3556. *C. grandis* and *C. Tatna*, Ham. in Wall. Cat. 3554, 3555.

PERAK: *Scortechini* 306. PENANG: *Curtis* 1444. DISTRIB.—British India, S. China and the Malay Archipelago.

Two varieties have been separated off but I have no specimens of either from any of the Provinces in our region. These are described as follows by Mr. Duthie in Hooker's Flora of British India.

VAR. *Paniala*; berries oval. *E. Paniala*, Roxb. Fl. Ind. II, 489; Wight Ic. t. 616; Kurz For. Fl. I, 483. *Syz. Panealla*, Wall. Cat. 3557? *Calyptranthes cuneata*, Ham. ?

VAR. *obovata*, Kurz For. Fl. I, 482; leaves obovate or oblanceolate, cymes more compact. *Syz. obovatum*, Wall. Cat. 3552, not of DC. *S. vastum*, Wall. Cat. 3661. *S. polyanthum*, Thwaites; not of Wight.

A third variety occurs in Perak but it has as yet been only once collected: It may be distinguished as follows.

VAR. *coriacea*; leaves thicker than in the type and not dotted or very obscurely dotted on the lower surface.

PERAK: *Wray* 2725, at Matong on the sea-coast.

95. EUGENIA NICOBARICA, King. A tree? Young branches rather thinner than a goose-quill, terete, somewhat rough, grey. *Leaves* thinly coriaceous, lanceolate or elliptic, the apex sub-acute, the base cuneate;

both surfaces (when dry) olivaceous-brown, the upper shining, with the midrib and main-nerves depressed; the lower paler and dull; main-nerves 5 to 8 pairs, faint on both surfaces; reticulations few, faintly visible on the lower invisible on the upper surface; length of the lanceolate form 2·5 to 3 in., of the elliptic form 3 to 4·5 in.; breadth respectively 1 to 1·5 in. and 1·5 to 2·5 in.; petiole ·6 to ·8 in. *Panicles* numerous, crowded on the branches below the leaves, trichotomous, 1 to 2 in. long, with a few divaricating, few-flowered branches. *Flowers* in threes at the ends of the branchlets, ·25 in. long (including the stamens), sessile or on short, stout 4-angled pedicels, obovoid in bud. *Calyx* ·1 in. long, lengthening to ·2 in. after fertilization, campanulate with a 4 in. wide, truncate, irregularly toothed thickened mouth, much narrowed to the base but not constricted into a pseudo-stalk. *Petals* 4 orbicular, calyptrate. *Fruit* unknown. *E. occlusa*, Kurz in Hook. fil. Fl. Br. Ind. II, 498 (not of Miquel).

NICOBAR ISLANDS: *Kurz*.

This has been collected only in the Nicobar islands and there only by Kurz who referred it to *Syzygium occlusum*, Miq. But it differs so much from an authentic specimen of that species in the Horsfield collection and from Miquel's own description, that I have given it a new name.

96. *EUGENIA JAMBOLANA*, Lamk. Dict. III, 198. A small tree; young branches thinner than a goose-quill, terete, very pale when dry. *Leaves* coriaceous, rather variable, rotund-ovate to oblong-ovate, bluntly and shortly acuminate, sub-acute or obtuse, slightly narrowed at the base; both surfaces brown when dry, the under paler; nerves and their connecting reticulations numerous, distinct when dry on both surfaces but especially on the lower, intra-marginal nerve and midrib prominent on the lower; length 2·5 to 4 in.; breadth 1·5 to 2·25; petiole ·6 to ·75 in. *Panicles* from the branches below the leaves, much branched; the branches divaricate, all terete, many-flowered, longer than the leaves. *Flowers* whitish, sessile, ·4 in. across. *Calyx* campanulate, suddenly contracted into a stout pseudo-stalk less than half its length, the limb at first obscurely and broadly 4-toothed but ultimately truncate. *Petals* 4, orbicular, rather more than ·1 in. long, calyptrate. *Fruit* ovoid-oblong, about the size of an olive, pulpy, smooth, dark-purple, 1-seeded. Ham. in. Wern. Soc. Trans. V, 342; Roxb. Fl. Ind. II, 484; Wight Ic. t. 535; Benth. Fl. Austral. III, 283; Bedd. Fl. Sylv. I, t. 197; Brandis For. Fl. 233; Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 67; For. Fl. I, 485. Duthie in Hook. fil. Fl. Br. Ind. II, 499. *Syz. Jambolanum*, DC. Prodr. III, 259; Wall. Cat. 3560; W. and A. Prodr. I, 329; Dalz. and Gibs. Fl. Bomb. 93. *E. frondosa*, Wall. Cat. 3560 G: not 3590. *E. Moorei*, F. Muell. Fragm. V, 33. *Calyptranthes Jambolana*, Willd. Sp. Pl. II, 975. *C. capitellata*,

Ham. in Wall. Cat. 3560 B. *E. caryophyllifolia*, Lam. Dict. III, 198; Roxb. Hort. Beng. 37; Fl. Ind. II, 486; Wight Ic. II, 553. *E. calyptrata*, Roxb. Ic. 1142? *Syz. caryophyllifolium*, DC. Prodr. III, 259; Wall. Cat. 3562 partly, and 3551, C.; Thwaites Enum. 116. *S. Jambolanum*, var. *microcarpum*, Thwaites Enum. 417; Wall. Cat. 3562 C. *Syz. lateriflorum*, Royle. *Myrtus Cumini*, Linn.: exclude syn. Rumph. and Burm.—Pluk. Alm. t. 274, 2. Rheede Hort. Mal. V, t. 29. Rumph. Herb. Amb. I. t. 41. *E. obtusifolia*, Roxb. Hort. Beng. 37; Fl. Ind. II, 485; Wight Ic. t. 620. *Jambolifera pedunculata*, Gaertn. Fruct. I, 78, t. 36.—Rumph. Herb. Amb. I, t. 42; (bad).

Not uncommon in cultivation in all the provinces and also in British India but rarely wild in any of the Malay provinces. The fruit although rather austere is eaten.

#### SPECIES OF DOUBTFUL POSITION.

The under-noted three species were described by Mr. Duthie in Hooker's Flora of British India. They are all founded on scanty specimens collected by Maingay. I quote the author's descriptions *verbatim*.

*E. fusiformis*, Duthie; young branches 4-gonous, leaves petioled obovate-lanceolate cuneate below subcoriaceous pellucid-punctate, lateral nerves rather close, cymes terminal compact branches angular and somewhat winged, flowers 2 or 3 together on short pedicels, calyx-tube narrowly fusiform much produced above the ovary.

MALAYA: Maingay 743.

*Bark* yellowish. *Leaves*  $4\frac{1}{2}$  by 3 in., shining a little above, minutely dotted; midrib and nerves dark-coloured; lateral nerves uniting within the margin; petiole about  $\frac{3}{8}$  in. *Calyx-tube*  $\frac{1}{2}$  in. in length and  $\frac{1}{2}$  in. across at the widest part; lobes 4, rounded, reflexed after flowering. *Style* persistent, exerted portion equalling the calyx-tube.—Closely allied to 2236 of Beccari's Borneo plants.

*E. maingayi*, Duthie; leaves shortly petioled long oblong-lanceolate acuminate rounded at the base, racemes short axillary or from the leafless axils of the rugged lower branchlets, calyx-tube elongate clavate about  $\frac{2}{3}$  in. glandular, lobes 4 rounded deciduous.

MALAYA: Maingay 750.

Older branchlets with rugged corky bark, upper stout, terete, reddish. *Leaves*  $4\frac{1}{2}$ – $7\frac{1}{2}$  by  $1\frac{3}{4}$ – $2\frac{1}{4}$  in., indistinctly nerved above, midrib stout beneath; petiole  $\frac{1}{2}$  in. *Style* short, acute.—This plant seems to approach nearest to *E. claviflora*, and has a general resemblance to *E. borneensis*, Miq. Fl. Ind. Bat. I, Pt. 1, 434 (*Jambosa*), but the petioles of the latter are much longer.

*E. tumida*, Duthie; leaves oblong-ovate or obovate shortly acuminate narrowed at the base closely nerved, cymes terminal and axillary equalling or exceeding the leaves, calyx-tube  $\frac{2}{10}$  in. narrow swollen below the middle.

MALACCA: Maingay 755.

*Branchlets* terete. *Leaves*  $2\frac{1}{2}$ – $3\frac{1}{2}$  in., chocolate-coloured above, rusty-yellow beneath when dried; lateral nerves slender, uniting close within the margin; petiole  $\frac{1}{4}$  in. *Panicles* lax, spreading; branches acutely angular. *Calyx* with 4 nearly equal shallow lobes.—The *petals* are probably free, though not expanding. The swollen part of the calyx-tube is occupied by the ovary.

## 9. PSEUDO-EUGENIA, Scortechini.

Trees with opposite punctate leaves and few-flowered, axillary, minutely bracteolate inflorescence. *Calyx-tube* turbinate or oblong, its mouth with 4 small rounded lobes, and bearing a thin annular stamiferous disc. *Petals* 4, orbicular, clawed. *Stamens* 8, in two rows; filaments inflexed in bud; *anthers* small, 2-celled. *Ovary* 2-celled. *Style* short. *Ovules* numerous, in several series on the placentas. *Fruit* as in *Eugenia*, 1- to 2-seeded. **DISTRIB.**—2 species, both Malayan.

A genus which differs from *Eugenia* chiefly in having only 8 stamens.

Leaves 4·5 to 6 in. long . . . . . 1. *P. perakensis*.

„ 1·5 to 2·5 in. long . . . . . 2. *P. singaporensis*.

1. PSEUDO-EUGENIA PERAKENSIS, Scortechini in Journ. Bot. XXIII (1885), 153. A tree, 15 feet high; young branches thin, terete. *Leaves* thinly coriaceous, elliptic-lanceolate, slightly narrowed at the base, the apex with a slender obtuse acumen, pellucid-punctate, the main-nerves close, inconspicuous on the upper surface, sub-horizontal, interarching near the margin; length 4·5 to 6 in.; breadth 1·5 to 2 in.; petioles short. *Calyx-lobes* incurved. *Petals* 4, small, free, spreading, distant. *Stamens* short. *Berry* pisiform. *Eugenia skiophila*, Duthie in Hook. fl. Fl. Br. Ind. II, 486.

PENANG: *Maingay*. PERAK: *Scortechini*.

2. PSEUDO-EUGENIA SINGAPORENSIS, King n. sp. A tree, 30 to 40 feet high; young branches as thin as a crow-quill or thinner, terete, smooth, dark-brown. *Leaves* thinly coriaceous, elliptic-lanceolate, slightly narrowed at the base, the apex abruptly and bluntly acuminate; both surfaces (when dry), dull and of a uniform dark-brown colour; the upper with the midrib depressed and the main-nerves and reticulations obscure; the lower minutely warted; the main-nerves numerous, faint, interarching near the edge; length 1·5 to 2·5 in.; breadth 4·5 to 7 in.; petioles 1 to 1·5 in. *Panicles* shorter than the leaves, axillary, few-branched and few-flowered; the peduncle and branches very slender, dark coloured, 4-angled. *Flowers* clavate in bud and greenish. *Fruit* unknown.

SINGAPORE: *Ridley* 2909; *King's Collector* 1242, 5957, 8710.

## NOTE.

In addition to the two species above described there are in the Calcutta Herbarium specimens of what appears to be a third species of this genus collected by Mr. Harvey near Malacca. In these specimens the leaves are ovate with acute apices and cuneate bases, and 5 to 7 pairs of ascending main-nerves rather prominent on the lower surface. The leaves are from 3 to 4 inches long and about half as much in breadth. The flowers measure about 3 in. in length and rise in pairs from the stems below the leaves. Mr. Forbes also collected in Sumatra specimens (Herb. Forbes 2889) of a small tree with elliptic, caudate-acuminate leaves

cuneate at the base, which probably belong to a fourth species of *Pseudo-eugenia*. The flower-buds of this, which measure less than  $\cdot 1$  in. in length, are borne in pairs below the leaves.

## 10. BARRINGTONIA, Forst.

Trees. *Leaves* alternate, crowded towards the ends of the branches, entire or slightly crenate-serrate, pinnate-nerved, not dotted. *Flowers* in elongated terminal and lateral racemes, or in interrupted spikes; bracts small, deciduous. *Calyx-tube* ovoid or turbinate, scarcely produced above the ovary; lobes 2-4, valvate, or 3-5, imbricate. *Petals* 4 rarely 5, much imbricate, somewhat adnate at the base to the staminal tube. *Stamens* numerous, in several series, connate into a short tube at the base; filaments filiform, long, all bearing anthers. *Ovary* inferior, 2-4-celled, crowned by an annular disc; style long, filiform, simple, stigma small; ovules 2-8 in each cell, pendulous. *Fruit* fibrous or somewhat berried, globose, ellipsoid or quadrangular, crowned by the calyx, by abortion 1-seeded. *Seed* ovoid or ellipsoid, without albumen; embryo large, exhibiting two layers, cotyledons nearly obsolete. **DISTRIB.**—Species 25; in tropical Asia, Africa, Australia and Polynesia, often near the sea.

Sect. I. BUTONICA. Calyx closed in bud and entire, ultimately splitting into 2 or sometimes into 3 lobes: flowers pedicelled.

Racemes short, erect or sub-erect; fruit conical.

Racemes terminal, erect; flowers 2.5 to 3 in. long and of greater diameter; fruit angled but not winged at the base ... .. 1. *B. speciosa*.

Racemes lateral or terminal, sub-erect; flowers less than 1 in. in diam.; fruit with 8 downward-pointing wings at the base ... .. 2. *B. conoidea*.

Racemes elongated, pendulous; fruit ovoid ... .. 3. *B. racemosa*.

Sect. II. STRAVIDIUM. Calyx with 4 (sometimes 3 or 5) imbricate lobes.

Racemes terminal, erect, short, 1- to 3-flowered ... .. 4. *B. pauciflora*.

Racemes lateral, pendulous, elongate, many-flowered.

Flowers more than  $\cdot 5$  in. across; leaves with distinct petioles from  $\cdot 75$  to 3 or 4 in. in length.

Flower-buds just before expansion about  $\cdot 25$  in. long; fruit ovoid or elliptic, not angled or only slightly so; rachis much thickened in fruit ... .. 5. *B. macrostachya*.

Flower-buds just before expansion more than  $\cdot 25$  in. long; fruit oblong, 4-angled.

Main-nerves of leaves 6 or 7 pairs; fruit 3 in. long; rachis of spike thickening slightly in fruit ... .. 6. *B. Scortechinii*.

Main-nerves of leaves 9 to 12 pairs; fruit glabrous, acutely 4-angled, less than 2 in. long; rachis of spike hardly thickening in fruit ... .. 7. *B. sumatrana*.

- Main-nerves of leaves 8 to 12 pairs; fruit minutely pubescent, 4 or 5 in. long; rachis of spike thickening much in fruit ... .. 8. *B. musiformis*.  
 Flowers less than .5 in. across; leaves sessile or with very short petioles.  
 Flowers pedicelled:—  
 Fruit fusiform ... .. 9. *B. fusiformis*.  
 Fruit, oblong truncate, boldly 4-angled ... 10. *B. acutangula*.  
 Flowers sessile or nearly so; fruit sub-globose 11. *B. spicata*.

1. *BARRINGTONIA SPECIOSA*, Forst. Char. Gen. t. 38 and t. 38 A and B. A glabrous tree, 30 to 50 feet high; young branches stout, grey. *Leaves* thinly coriaceous, obovate-oblong or obovate, with broad rounded apex and much narrowed base, sessile, entire; main-nerves about 10 pairs, not prominent; length 6 to 14 in.; breadth 3.5 to 7 in. *Panicles* short (4 to 8 in. long) erect, terminal, with 1 or 2 leaf-like bracts at the base, few-flowered. *Flowers* 6 to 12, large (2.5 to 3 in. long and 5 in. in diam.), on long pedicels bracteolate at the base. *Calyx* with 2 large oblong, nerved (2 to 4 in.) lobes .75 to 1.25 in. long, persistent. *Petals* 4, white, larger than the calyx, (2.5 in. broad) deciduous. *Stamens* very numerous, longer than the petals but shorter than the style. *Fruit* large, shining, quadrangular-truncate at the base, tapering to the apex and crowned by the persistent calyx, bluntly 4-angled, sometimes sub-ovoid and less prominently angled, 3 in. or more in breadth at the base and slightly more in length; pericarp very thick, fibrous, spongy. *Seeds* ovoid, 2 or more in. long. Flor. des Serres IV, 409; Linn. f. Suppl. 312; DC. Prodr. III, 288; Roxb. Fl. Ind. II, 636; Wall. Cat. 3632, excl. B; Blume Bijdr. 1096; W. & A. Prodr. 333; Wight Ic. t. 547; Miq. Fl. Ind. Bat. I, Pt. 1, 485; Miers in Trans. Linn. Soc. Ser. II, Bot. 1, 55, t. 10; Kurz For. Fl. I, 496; Clarke in Hook. fil. Fl. Br. Ind. II, 507; Trimen Flora Ceylon II, 189. *B. asiatica*, Kurz in Journ. As. Soc. 1877, Pt. 2, 70. *B. ? macrophylla*, Miq. l.c. 491. *Mammea asiatica*, Linn. Sp. Pl. 731. *Agasta splendida, asiatica* and *indica*, Miers l.c. 60-64, tt. 11, 12. *Butonica*, Rumph Herb. Amb. III, t. 114.

In all the Provinces, on the sea-coasts: **DISTRIB.**—The shores of the Malay islands and British India; also of Australia and Polynesia.

The late Mr. Miers excluded from the genus *Barringtonia* everything except a plant now known by an imperfect specimen preserved in the Banksian collection and by Forster's drawings, which latter represent a 4-celled fruit. The plant here described to which Forster's name had, prior to the issue of Mr. Miers' monograph in the Linnæan Transactions, by common consent been given, is one of three forms of the plant on which Miers founded the genus *Agasta*. On characters largely based upon slight differences in the shape of the fruit, Miers distinguished his three species *Agasta splendida, asiatica* and *indica*. The latest writers on

Indian Botany who have dealt with the Indian *Barringtonias* (Mr. C. B. Clarke in Hooker's Flora of British India, and the late Dr. H. Trimen in his Flora of Ceylon) adopt the view that obtained prior to the publication of Miers' paper, and they believe that the three species of *Agasta* of the latter author are merely forms of the *Barringtonia speciosa* of Forster. If Miers' arrangement, however, is to be followed, the name of the plant occurring on the coasts of the Malay Peninsula and of British India would be either *Agasta indica* or *A. asiatica* according to the shape of the base of the fruit. Miers says of the fruit of the form which he considers alone entitled to the name *Barringtonia speciosa*, *fructus non vidi*, and he relies solely on Forster's figure (Char. Gen. t. 33 B, fig. b). In his account of it that figure no doubt shows a 4-celled fruit. Whether or not Forster or his artist had a fully-developed fruit before him when he made the drawing referred to cannot be known. But however that may be, the characters, other than the number of cells in the fruit of Forster's *Barringtonia* and of Miers' three *Agastas* are practically alike, and I fail to see any good basis for the foundation on them of four species belonging to two genera.

2. BARRINGTONIA CONOIDEA, Griff. Notul. 656. Ic. 635, 636, fig. 1. A large bush or small tree, glabrous; young branches sub-sulcate. *Leaves* thickly membranous, oblanceolate-elliptic or cuneate-oblong, narrowed at the minutely subcordate or rounded base to the short, stout petiole; the apex blunt or sub-acute; the edges obscurely crenate-serrulate or subentire; main-nerves 9 to 13 pairs, curved, ascending; length 4.5 to 10 in.; breadth 2 to 4 in.; petiole .15 to .2 in. *Racemes* suberect, lateral or terminal, few-flowered, about 4 in. long, glabrous or puberulous. *Flowers* less than 1 in. long and 1 in. across, on pedicels .5 to .6 in. long. *Calyx* with a subcylindric tube, .15 in. long; the base with 8 gibbous processes; the limb bipartite. *Petals* 4, fleshy, ovate-lanceolate. *Stamens* much exceeding the corolla. *Fruit* fibrous-fleshy, conoid, produced at the base into 8 wing-like semi-cordate fleshy processes and crowned at the apex by the calyx, 2.5 in. long and 1.75 in. broad at the base. Kurz For. Flor. Burma I, 497; Clarke in Hook. fil. Fl. Br. Ind. II, 508. *B. alata*, Wall. Cat. 3633. *Butonica alata*, Miers in Trans. Linn. Soc. Ser. II, Bot. I, 70, t. 14, figs. 10 to 15.

MALACCA: Griffith (Kew Dist. 2423). PERAK: *Scortechini* 1385. BURMAH: *Wallich*.

At once distinguished by its curious conical fruit winged at the base.

3. BARRINGTONIA RACEMOSA, Roxb. Hort. Beng. 52; Fl. Br. Ind. II, 634. A glabrous tree, often 50 feet high; young branches rather stout, cinereous. *Leaves* membranous, oblong-obovate or oblanceolate, shortly acuminate, narrowed to the shortly petiolate base, faintly crenate-denticulate; main-nerves 8 to 15 pairs, spreading or ascending, thin but prominent on the lower surface when dry; length 4 to 12 in.; breadth 2 to 4 in.; petiole .1 to .25 in. *Racemes* much longer than the leaves, (10 to 24 in. long) from the axils of fallen leaves or terminal,

pendulous, many-flowered, minutely bracteolate. *Flowers* distant, 1·5 to 2 in. in diam., on thin pedicels ·2 to ·3 in. long, buds globose. *Calyx* turbinate, obconic, 2- or 3-partite, permanent. *Petals* 4, oblong. *Stamens* very numerous, much longer than the calyx but shorter than the style. *Fruit* as large as a hen's egg and of much the same shape, but somewhat 4-sided, nearly smooth, the pericarp leathery; seed solitary ovate-oblong. DC. Prodr. III, 288; Wall. Cat. 3634; W. & A. Prodr. 333; Wight Ic. t. 152, including fruit; Bot. Mag. t. 3831; Dalz. & Gibs. Bomb. Fl. 94; Gaud. Voy. Freyc. t. 107; Vidal, F. Fl. Fil., t. 50a; Kurz For. Fl. I, 496; Clarke in Hook. fil. Fl. Br. Ind. II, 507; Trimen Flora Ceyl. II, 189. *B. speciosa*, Wall. Cat. 3632 B. *B. alba*, Miq. Fl. Ind. Bat. I, Pt. 1, 487. *Eugenia racemosa*, Linn. Sp. Pl. 673. *Stravidium album*, DC. Prodr. III, 289. *Butonica racemosa* and *alba*, Miers in Trans. Linn. Soc. Ser. II, Bot. I, 65, 66, t. 13, figs. 1-17. *B. rubra* and *incluta*, Miers l.c. 70, 71, t. 14, figs. 1-3, 19.—Rheede Hort. Mal. IV, t. 6.

In all the provinces; on the sea shores. **DISTRIB.**—Brit. India, Malayan Archipelago, Polynesia.

4. **BARRINGTONIA PAUCIFLORA**, King n. sp. A tree, 30 or 40 feet high; young branches slender, glabrous, pale-brown when dry. *Leaves* thickly membranous, broadly oblanceolate narrowed into the petiole at the base; the apex suddenly and shortly caudate-acuminate; main-nerves 8 to 10 pairs, curving upwards; length 3 to 4·5 in.; breadth 1·25 to 2 in.; petiole ·4 to ·8 in., slender. *Raceme* solitary, terminal, erect, 1·5 to 2 in. long, bearing only 2 or 3 flowers or sometimes only a single one. *Flowers* about 1·75 in. long. *Calyx-tube* funnel-shaped, boldly 4-angled, sparsely rufous-furfuraceous, ·4 in. long; the lobes 4, ovate-rotund, blunt, shorter than the tube. *Petals* 4, obovate-oblong, glabrous, 1 in. long. *Stamens* longer than the petals. *Fruit* unknown.

PERAK: *Scortechini* 939; *King's Collector* 6355.

5. **BARRINGTONIA MACROSTACHYA**, Kurz in Journ. As. Soc. Beng. XLVI, Pt. 2, 71; For. Flora Burma II, 498. A glabrous shrub or small tree; young branches pale-brown, striate. *Leaves* oblong-oblan-ceolate or oblong-elliptic, narrowed to the long slender petiole, the apex abruptly acuminate, the edges entire or with broad shallow crenations; main-nerves 14 to 18 pairs, curved, ascending, rather prominent beneath when dry; length 5 to 12 in.; breadth 2 to 5 in.; petiole 1 to 4·5 in. *Spikes* lateral (often extra-axillary) or terminal, pendulous, 1 to 2 feet long, glabrous or puberulous, stout, rather fleshy and much thickened in the fruiting stage; bracteoles minute, caducous. *Flowers* sessile, crowded, nearly 2 inches long and 1 in. across when expanded. *Calyx-tube* obconic, 4-angled, ·25 in. long; the limb with 4 broad, blunt lobes



·2 in. long. *Petals* oblong sub-acute, 1 in. long. *Filaments* twice as long as the petals. *Fruit* broadly-ovoid or elliptic, smooth, not angled or only slightly so, crowned by the small calyx-lobes, 1·5 to 2 in. long and about 1·35 in. in diam. Clarke in Hook. fil. Fl. Br. Ind. II, 509 (excl. syn. *B. pendula*, Kurz and *Doxomma pendula*, Miers). *B. cylindrostachya*, Griff. Notul. IV, 655. *B. sarcostachys*, Miq. Fl. Ind. Bat. I, Pt. 1, 490. *Stravidium sarcostachys*, Blume in Van Houtte Fl. des Serres, VII, 24. *S. acuminatum*, Wall. Cat. 3636. *Doxomma macrostachyum*, *cylindrostachyum*, *acuminatum*, Miers in Trans. Linn. Soc., Ser. II, Bot. I, 104, 100, 102. *Careya macrostachya*, Jack in Mal. Misc. I, 47; DC. Prodr. III, 295.

MALACCA: *Maingay* (K.D. 763); *Griffith* (K.D. 2421): PENANG: *Curtis* 1581. NEGRI SEMBILAN: *Ridley* 1852. PERAK: *Scortechini* (without No.); *Wray* 1299, 2410, 3136, 3642, 3635; *King's Collector* 3402, 3779, 4136, 10075, 10206, 10615. DISTRIB.—Borneo, Burmah, *Griffith*; *Gallatty*.

This is allied to *B. pendula*, Kurz—a rare species from Southern Burma originally described by Griffith as *Careya pendula* (Notulæ IV, 661). That species, however, has narrower leaves than this with fewer nerves; the calyx-tube is elongate, the stamens are only about one inch long; and the fruit is narrowly oblong, boldly 4-angled, more than 2 in. long and only about ·65 in. in diam. There is an excellent drawing of this plant with full analyses of the flowers in the Herb. Kew, which was made from living specimens by the Rev. C. Parish. The species has been reduced in Hooker's Flora of British India to *B. macrostachya* from which it differs in the points above noted.

6. BARRINGTONIA SCORTECHINII, King n. sp. A glabrous tree, 50 to 60 feet high; young branches slender, pale-brown, glabrous. *Leaves* thinly coriaceous, elliptic-oblong to oblanceolate-oblong, tapering (often very much) to the petiole; the apex acute or shortly acuminate; the margins entire or obscurely and minutely dentate; main-nerves 6 or 7 pairs, spreading, curved; length 3 to 6·5 in.; breadth 1·5 to 2·5 in.; petiole ·5 to ·8 in. *Spikes* lateral, pendulous, 6 to 18 in. long, glabrous, rather slender but slightly thickening with age. *Flowers* numerous, 1·5 to 2 in. long, narrow. *Calyx-tube* bracteate at the base, glabrous, obconic, 4-angled, ·25 in. long; the 4 lobes shorter than the tube, broad, rounded. *Petals* oblong, blunt, ·75 in. long. *Filaments* 1·5 to 2 in. long. *Ovary* 3-celled (usually). *Fruit* oblong, somewhat tapered but truncate at each end: the apex mamillate crowned by the small calyx-lobes, smooth, 3 in. long and 1 in. diam.

PERAK: *Scortechini* 237, 395, 1674, 2020; *Wray* 2087; *King's Collector* 3598, 3854, 6252; *Curtis* 1296.

There are two distinct forms under this species; one with oblong-elliptic

leaves and rather larger flowers; the other with leaves oblanceolate, more slender spike-rachis and smaller flowers, but the two pass into each other.

7. *BARRINGTONIA SUMATRANA*, Miq. Fl. Ind. Bat. Suppl. 315. A glabrous tree; young branches pale, as thick as a goose-quill. *Leaves* coriaceous, elliptic or oblong-elliptic tapering much to the base, the apex shortly and rather abruptly acuminate, the edges obscurely serrate or entire, slightly wavy somewhat recurved when dry; upper surface shining when dry, the lower dull and paler, both minutely reticulate; main-nerves 9 to 12 pairs, thin but prominent; length 4.5 to 7.5 in.; breadth 1.4 to 3 in.; petiole .75 to 2 in., thickened at the base. *Spikes* axillary and terminal, pendulous, angled, glabrous, 9 to 15 in. long, not thickening in fruit. *Flowers* numerous, more than 1 in. long and nearly as much across, sessile. *Calyx* .5 in. long; the tube infundibuliform, acutely 4-angled; the lobes half as long as the tube, broadly ovate, concave, spreading. *Petals* broadly oblong, very blunt, .65 in. long. *Stamens* .75 in. long or more. *Style* slender, 1.6 in. long. *Fruit* oblong, somewhat tapered to the base, less so to the calyx-crowned apex, acutely 4-angled, smooth and shining, 1.75 in. long, and .65 in. in diam.

SINGAPORE: *Ridley* 277, 2056. SUMATRA: *Miquel* (Herb. Bogor 4536). CELEBES: *Beccari*.

8. *BARRINGTONIA MUSIFORMIS*, King n. sp. A large tree, 60 to 80 feet high; young branches as thick as the fore finger, brownish, glabrous. *Leaves* thinly coriaceous, entire, or obscurely crenate towards the apex, oblong-oblanceolate or narrowly elliptic-oblong, much tapered to the long slender petiole, the apex shortly acuminate; main-nerves 8 to 12 pairs, curved, ascending, not conspicuous; length 5 to 10 in.; breadth 1.75 to 3.25 in.; petiole .75 to 2.25 in. thickened at the base. *Spikes* axillary, suberect, 12 to 14 in. long, stout, striate, thickening to .6 in. in diameter or more in fruit, the cicatrices of the fallen flowers very prominent, scurfy-puberulous. *Flowers* large, sessile. *Calyx* campanulate, 1.25 in. in diam. at the mouth, densely but minutely rusty-pubescent; the tube subcylindric, only .2 in. long; the 4 lobes large, ovate-rotund, blunt, .75 in. long. *Petals* 4, concave, rotund, scurfy outside. *Fruit* narrowly-oblong, 4-angled, sub-truncate at each end, the upper crowned by the calyx and the 2 inch long style, minutely pubescent, 4 or 5 in. long, and 1 to 1.5 in. thick.

PERAK: *King's Collector* 5746, 6154.

I have seen no expanded flowers of this as the collected specimens are either in bud or in fruit. Its nearest allies are *B. augusta*, Kurz, *B. pterocarpa*, Kurz, and *Dozomma magnificum* Miers, but all these have much smaller flowers and their leaf petioles are very short. The ripe fruit of this resembles in shape a small banana, but the endocarp and pericarp have a very different texture, being in this densely fibrous.

9. *BARRINGTONIA FUSIFORMIS*, King n. sp. A small tree, 10 to 20 feet high; young branches slender, puberulous, pale when dry. *Leaves* membranous, oblanceolate or obovate-oblong, narrowed to the cordate base, sessile or sub-sessile; the apex obtuse or acute; the edges remotely serrate becoming almost entire when old; main-nerves 12 to 16 pairs, curved, ascending, slightly prominent on the lower surface when dry; length 4 to 8 in.; breadth 1·4 to 2·4 in.; petiole (if present) only ·05 in. long. *Racemes* axillary, very slender, pendulous, much exceeding the leaves, lax, minutely rusty-pubescent, 1 to 2 feet long, surrounded at the base by a whorl of lanceolate persistent bracts ·5 in. long. *Flowers* ·4 in. across, distant, on slender pedicels 1 in. long; the bracteole at the base of each pedicel lanceolate, deciduous. *Calyx* 3 in. long; the tube obconic, densely rusty-puberulous; the teeth 4, broad, rounded, less puberulous than the tube. *Petals* slightly longer than the calyx, broadly obovate. *Stamens* three times as long as the petals. *Fruit* fusiform, tapering almost equally to each end; the apex crowned by the small calyx, 4-angled, deciduously rusty-pubescent, 2·25 in. long and only ·5 in. in diam.

PERAK: *Scortechini*; *King's Collector* 10388, 10643, 10094.

The very long flower pedicels and the narrowly fusiform fruit distinguish this from all the other species.

10. *BARRINGTONIA ACUTANGULA*, Gærtn. Fruct. II, 97, t. 101. A glabrous tree, 25 to 50 feet high; young branches thin, pale-grey, glabrous. *Leaves* obovate-oblong, or cuneate-elliptic, much narrowed to the shortly petiolate base, the apex broad rounded or subacute, the edges minutely denticulate or cuneate: main-nerves 10 to 13 pairs, spreading, not prominent; length 2 to 5 in.; breadth 1·1 to 2 in.; petiole ·15 to ·2 in. *Racemes* much exceeding the leaves, slender, pendulous, many-flowered, from 6 to 15 in. long. *Flowers* ·3 or ·4 in. across, in slender pedicels from ·05 to ·25 in. long. *Calyx* with short tube and 4 rounded, regular, ciliate teeth. *Petals* small, under ·25 in. long. *Filaments* about three times as long. *Fruit* oblong or oblong-ovoid, truncate at both ends, crowned by the small calyx, glabrous, boldly but bluntly quadrangular, 1·25 to 1·5 in. long. Roxb. Fl. Ind. II. 635; Blume Bijdr. 1097; W. & A. Prodr. 333; Miq. Fl. Ind. Bat. I, Pt. 1, 488; Dalz. & Gibs. Bomb. Fl. 95; Bedd. Fl. Sylv. t. 204; Brand. For. Fl. 235; Kurz For. Fl. Burm. I, 497; Clarke in Hook. fil. Fl. Br. Ind. II, 508; Trimen Flora Ceylon II, 191. *Stravidium rubrum*, DC. l.c. 289. *S. acutangulum*, Miers in Trans. Linn. Soc. Ser. II, Bot. I, 80 t. 17 figs. 1 to 14. *S. obtusangulum* and *S. Rheedii*, Blume in Van Houtte Flore des Serres VII, 24; Miers l.c. *Eugenia acutangula*, Linn. Sp. Pl. 673.

I include this species as Malayan with some hesitation. Most of the Malayan

specimens bearing the name I would refer to *B. spicata*, Bl. It is however a widely distributed and common tree in India and particularly so in Burma and it is quite likely to occur in Quedah and the northern part of Perak.

11. : BARRINGTONIA SPICATA, Blume Bijdr. 1097. A tree, 30 or 40 feet high; young branches slender, smooth, brown when dry. Leaves oblong-ob lanceolate, tapering to the short petiole, the apex acute or subacute, the edges distinctly serrate-dentate; main-nerves 8 to 10 pairs, curving slightly, ascending; length 4 to 8 in.; breadth 1.4 to 2.4 in.; petiole .2 to .3 in. Spikes axillary or terminal, exceeding the leaves, very slender, pendulous; bracteoles minute, caducous. Flowers small, numerous but not crowded, sessile or with a very short pedicel, about .5 in. in diameter when expanded. Calyx with obconic, rusty-pubescent tube less than .1 in. long, and 4 broad, rounded teeth half as long. Stamens .5 in. long. Fruit sub-globose, glabrous, crowned by the enlarged calyx-lobes, about .6 in. in diam. Miq. Fl. Ind. Bat. I, Pt. 1, 489; Vriese Ned. Kruidk. Arch. III, 41. *Stravidium spicatum*, DC. Prodr. III, 289; Blume in Van Houtte Flore des Serres VII, 24. *S. spicatum* and *globosum*, Miers in Trans. Linn. Soc. Ser. II, Bot. 1, 85. *Gustavia globosa*, Span. Trans. Linn. Soc. XV, 204. ? *Stravidium denussum*, *pubescens*, *reticulatum*, *Horsfieldii* and *serratum*, Miers l.c. 81 to 86. ? *S. coccineum*, DC. Prodr. III, 289; Miers l.c.

MALACCA: Griffith (K.D.) 2425; Derry 1221; Maingay (K.D.) 765. PENANG: Curtis 397. TRANG: King's Collector 1404. PERAK: King's Collector 4681. PROVINCE WELLESLEY: Ridley 7043. DISTRIB.—Java, Borneo; Motley 537, 582; Zollinger Cat. 534.

This resembles *B. acutangula*, Gaertn., but differs in having sessile flowers, shorter stamens, and sub-globose not elongated angular fruit. The leaves also are less obovate. It is a widely distributed species and therefore presents various forms, many of which have been treated as species.

## 11. PLANCHONIA, Blume.

Trees with alternate, membranous, crenulate, pinnately-nerved leaves without dots, crowded towards the ends of the branches. Flowers white or yellowish-green, in short terminal racemes. Calyx-tube turbinate, little produced beyond the ovary; its mouth with 4 imbricate lobes. Petals 4, imbricate. Stamens very numerous, in several series, slightly united at the base into a ring, the inner without anthers, the filaments of all long and slender. Ovary inferior, 3-4-celled, crowned by an annular disc. Style 1, long, slender, crowned by the small stigma; ovules many in each cell. Fruit large, fibrous, ovoid, crowned by the persistent calyx-lobes, 1-3-celled. Seeds several, ellipsoid, the testa coriaceous, albumen absent, cotyledons short. DISTRIB.—Three species; littoral, from the Andaman islands to Australia.

- Leaves obovate, distinctly crenulate; flowers sessile ... 1. *P. sundiaca*.  
 Leaves broadly elliptic, obscurely crenulate; flowers on  
 long pedicels ... .. 2. *P. andamanica*.

1. *PLANCHONIA SUNDIACA*, Miq. A tree, 50 feet high; young branches thicker than a goose-quill, the bark rough, pale-brown. *Leaves* distinctly crenulate, obovate, much and gradually narrowed into the petiole; the apex with a short triangular apiculus; both surfaces brown (when dry), the reticulations faint: main-nerves 12 to 18 pairs, spreading, depressed on the upper prominent and often pale in colour on the lower surface; length 3 to 6·5 in.; breadth 1·75 to 3 in.; petiole ·3 to ·6 in. *Racemes* 2 in. long, few-flowered. *Flowers* white with pink towards the centre, about 1·5 in. long, sessile. *Calyx-tube* ·6 or ·7 in. long, campanulate, ribbed below: the lobes oblong, broad, subacute. *Petals* narrowly oblong, acute, longer than the calyx and about as long as the stamens. *Fruit* (unripe) broadly oblong-ovoid.

PERAK: *Wray* 2366; *King's Collector* 7096. *DISTRIB.*—Sumatra, *Forbes* 3254.

2. *PLANCHONIA ANDAMANICA*, King n. sp. A tree; young branches as thick as a goose-quill, pale-brown, smooth. *Leaves* broadly elliptic or elliptic-rotund, slightly and abruptly tapered into the narrowly winged petiole, the apex with a short triangular acumen, the edges indistinctly crenulate; upper surface olivaceous-brown, the lower pale-brown, not olivaceous; main-nerves 10 to 12 pairs, spreading, dark on the upper and pale on the lower surface but not very bold on either, length 5 to 7 in.; breadth 3 to 4 in.; petioles ·6 to ·8 in. *Racemes* 3 or 4 in. long; the flowers about 2 in. long on stalks 1 to 2 in. long. *Calyx* ·8 or ·9 in. long, campanulate, its lobes large, elliptic-rotund, obtuse. *Petals* broadly elliptic, very obtuse. *Fruit* unknown.

ANDAMAN ISLANDS: *King's Collector*.